Hungry City

How Food Shapes Our Lives

Carolyn Steel

'Exuberant, provocative... vital'
David Aaronovitch, *The Times*

VINTAGE

CAROLYN STEEL

Hungry City

How Food Shapes Our Lives

VINTAGE BOOKS
London

Published by Vintage 2013

2 4 6 8 10 9 7 5 3 1

First published in Great Britain in 2008 by
Chatto & Windus

First published in paperback in Great Britain in 2009 by
Vintage

Vintage
Random House, 20 Vauxhall Bridge Road,
London SW1V 2SA

www.vintage-books.co.uk

Addresses for companies within The Random House Group Limited can be found at:
www.randomhouse.co.uk/offices.htm

The Random House Group Limited Reg. No. 954009

A CIP catalogue record for this book
is available from the British Library

ISBN 9780099584476

The Random House Group Limited supports The Forest Stewardship Council® (FSC®), the leading international forest certification organisation. Our books carrying the FSC label are printed on FSC® certified paper. FSC is the only forest certification scheme endorsed by the leading environmental organisations, including Greenpeace. Our paper procurement policy can be found at:
www.randomhouse.co.uk/environment

Printed and bound by CPI Group (UK) Ltd, Croydon, CR0 4YY

Contents

Introduction

Close your eyes and think of a city. What do you see? A jumble of rooftops stretching off into the distance? The chaos of Piccadilly Circus? The Manhattan skyline? The street where you live? Whatever it is you imagine, it probably involves buildings. They, after all, are what cities are made of, along with the streets and squares that join them all together. But cities are not just made of bricks and mortar, they are inhabited by flesh-and-blood humans, and so must rely on the natural world to feed them. Cities, like people, are what they eat.

Hungry City is a book about how cities eat. That is the quick definition. A slightly wordier one might be that it is about the underlying paradox of urban civilisation. When you consider that every day for a city the size of London, enough food for thirty million meals must be produced, imported, sold, cooked, eaten and disposed of again, and that something similar must happen every day for every city on earth, it is remarkable that those of us living in them get to eat at all. Feeding cities takes a gargantuan effort; one that arguably has a greater social and physical impact on our lives and planet than anything else we do. Yet few of us in the West are conscious of the process. Food arrives on our plates as if by magic, and we rarely stop to wonder how it got there.

Hungry City deals with two major themes – food and cities – yet its true focus is on neither. It is on *the relationship between the two*: something no other book has ever directly addressed. Both food and cities are so fundamental to our everyday lives that they are almost too big to see. Yet if you put them together, a remarkable relationship emerges – one so powerful and obvious that it makes you wonder how on earth you could have missed it. Every day we inhabit spaces food has made,

unconsciously repeating routine actions as old as cities themselves. We might assume that takeaways are a modern phenomenon, yet five thousand years ago, they lined the streets of Ur and Uruk, two of the oldest cities on earth. Markets and shops, pubs and kitchens, dinners and waste-dumps have always provided the backdrop to urban life. Food shapes cities, and through them, it moulds us – along with the countryside that feeds us.

So why write about food and cities, and why now? With cities already gobbling up 75 per cent of the earth's resources and the urban population expected to double by 2050, the subject is certainly topical. Yet the real answer is that *Hungry City* is the result of a lifelong obsession. Seven years in the making, it has taken a lifetime to research, although for most of that time, I had no idea that it – or indeed, any book – would be the outcome. *Hungry City* is an exploration of the way we live, from the perspective of someone who decided at the age of ten she wanted to be an architect, and has spent the rest of her life trying to work out why.

Perhaps because I was born and bred in central London, I have always been interested in buildings. However, my interest was never limited to the way they looked, or to their physical form. More than anything else, I wanted to know *how buildings were inhabited*. Where the food came in, how it got cooked, where the horses were stabled, what happened to the rubbish – these details fascinated me as much as the perfect proportions of their facades. Most of all, I loved the unspoken bond between the two: the public/private, upstairs/downstairs divisions within buildings, and the way they were subtly interwoven. I suppose I have always been drawn to the hidden relationships between things.

This predilection probably came from my grandparents' hotel in Bournemouth, where I spent most of my holidays as a child. Wandering around the hotel on my own, I had the excitement of knowing both its 'front of house' and 'backstage' areas at once, and of being able to move between the two at will. I always preferred to lurk in the service quarters: the sculleries full of teapots and hot-water bottles; the laundry room with its piles of freshly ironed, neatly folded linen; the porters' room, with its ancient workbench and the stench of

tobacco and furniture polish. But more thrilling by far were the kitchens, with their worn tiled floors and greasy enamel walls, mounds of butter and chopped vegetables, steaming stills and copper pans full of fragrant boiling stock. I loved those rooms, not just for their pragmatic homeliness, but for the fact that they were separated from all the antiques and politeness of the public rooms by the merest swing of a green baize door. The allure of such thresholds has never left me.

Looking back, I suspect my love of food must have begun then, although it was only years later that I realised that my twin passions for food and architecture were really two aspects of the same thing. It was architecture that I pursued as a career, first studying it at Cambridge, and then, two years after qualifying, returning there to teach. By then, I understood architecture to be the embodiment of human dwelling in its fullest sense, with politics and culture as its social contexts, landscape and climate its physical ones, and cities its greatest manifestation. Architecture encompassed every aspect of human life – which made the teaching of it in an architecture school somewhat limiting. I felt increasingly that in order to study architecture, one had to look away from it – only then could one see it for what it really was. It seemed to me that what was missing from the traditional discipline was life itself: the very thing it was supposed to support. I found the same in practice: discussing projects with clients, it was clear to me that I had somehow learnt to think and speak in an architectural code that excluded non-practitioners. This struck me as not only wrong, but potentially disastrous. How could architects expect to design spaces for people to inhabit, if we had no proper dialogue with them?

I began to look for ways of bridging the gap: to bring life into architecture, and architecture to life. My search took me to Rome in the 1990s, where I studied the everyday habits of a local neighbourhood over the course of 2,000 years; and to the London School of Economics, where I was director of the first urban design studio ever held there. My time at the LSE was fascinating: there were architects, politicians, economists, developers, sociologists, housing experts and engineers all gathered together in one room, trying (and failing) to find a common language with which to discuss cities. It was then that I hit on the idea of using food as a common medium. How would it be, I

wondered, if one tried to describe a city through food? I was confident that such a thing could be done, but had no idea how one might go about it, or where it would lead. Seven years later, this book is the result.

Hungry City began as an attempt to describe one city – London – through food, but it became much more than that. It was only through writing the book that I realised I had stumbled on a connection so profound that its applications were virtually limitless. Writing it has been a bizarre as well as lengthy process, since it has taken place during a period in which many of the themes I was linking together – food miles, the obesity epidemic, urbanisation, the power of supermarkets, peak oil, climate change – were rising inexorably in the public consciousness. Eventually, it got to a point where I could barely turn on the radio or TV without dashing to my computer to take notes. Food has become a hot topic in contemporary Britain, and a very fast-moving one. I dare say that by the time you are reading this, the scene will have shifted again. No matter. *Hungry City* taps into the zeitgeist, yet its essential themes are as old as civilisation itself.

With a book as horizontal in scope as mine, I have had to thread my arguments carefully. *Hungry City* is not an encyclopaedic book; it is more of an introduction to a way of thinking. It uses London (and other cities in the West) to draw out eternal themes that are global in reach: to trace the critical path of urban civilisation as seen through food, from the ancient Near East, through Europe and America, to modern-day China. The book follows food's journey from land and sea to city, through market and supermarket to kitchen and table, waste-dump and back again. Each chapter begins with a snapshot of contemporary London, exploring the historical roots of that stage of food's journey and the issues it raises. The chapters deal in turn with farming, food transport, shopping, cooking, eating and waste, asking how each affects our lives, and impacts on the planet. The final chapter asks how we might use food to rethink cities in the future – to design them and their hinterlands better, and live in them better too.

Writing *Hungry City* has changed the way I see the world so fundamentally that I now struggle to imagine how I saw it before. To see the world through food, as I now do, is to see it with lateral vision;

to understand how apparently disparate phenomena are in fact connected. I very much hope that reading the book will change the way you see things too – that it will show you how powerfully food shapes *all* our lives, and give you the power and motivation to engage more with food, and through it, to help shape our common destiny.

Chapter 1

The Land

The supply of food to a great city is among the most remarkable of social phenomena – full of instruction on all sides.

George Dodd[1]

Detail of *The Allegory of Good Government* by Ambrogio Lorenzetti. A rare glimpse of city and country in perfect harmony.

Christmas Dinner

In the run-up to Christmas a couple of years ago, anyone with access to British television and some recording equipment could treat themselves to a surreal evening's viewing. At nine p.m. one night, two programmes were broadcast simultaneously about how our Christmas dinners are produced. You had to be a bit keen, even obsessed, to watch both, but if you chose to make a night of it as I did, the effect was truly discombobulating. First up was *Rick Stein's Food Heroes Christmas Special*, in which Britain's favourite champion of high-quality local produce set off in his Land Rover (accompanied by faithful terrier Chalky) to sniff out the finest smoked salmon, turkey, chipolatas, Christmas pudding, Stilton and fizz the nation has to offer.[2] An hour of gorgeous landscapes, uplifting music and mouthwatering fodder later, I could hardly bear to wait six days before tucking into the promised feast for real. But lurking on my DVD recorder was the antidote to all that. While Rick and Chalky had been busy charming millions of us into the festive mood on BBC2, on Channel 4 the *Sun* journalist Jane Moore had been putting off several million others from ever eating Christmas dinner again.

In *What's Really in Your Christmas Dinner*, Moore explored the same traditional meal as Rick Stein, but sourced her ingredients from rather different suppliers. Using secretly shot footage of unspecified industrial units, she showed how most of our Christmas food is produced, and it wasn't a pretty sight. There were pigs on a Polish factory farm confined to sow stalls too narrow to turn around in; turkeys crowded together in massive dark sheds with so little space to move that many went lame.[3] The normally unruffled chef Raymond Blanc was wheeled in to perform a post-mortem on one specimen, revealing its pathetically

weak bones and blood-swollen liver (both the result of premature growth) with a zeal that was close to macabre. If life was grim for these birds, the manner of their death was even worse. Slung into trucks by their legs, they were hung upside down from hooks on a conveyor belt, their heads dipped into a stun bath that rendered them unconscious (although not always) before having their throats cut.

Back on BBC2, Rick Stein also touched on what he called the 'unmentionable side of turkeys – slaughtering them'. The subject came up when he visited Andrew Dennis, an organic farmer whose turkeys are reared in flocks of 200 or fewer in natural woodland, where they can forage freely, just as their forebears would have done in the wild. Dennis sees his turkey-rearing enterprise as an exemplar that he hopes will be followed by others. 'Of all farm animals,' he says, 'turkeys are by far the most abused. And that's why we're trying to produce a blueprint for compassionate turkey rearing and breeding.' When the time comes for their slaughter, the birds are taken to an old barn familiar to them and killed individually, out of sight of one another. When his slaughterman failed to turn up in 2002, Dennis practised what he preaches, killing every one of his birds himself. 'It's the quality of life that's so important, and the quality of death,' he says, 'and if you can provide for both those things, I think I'm comfortable with what we do.' So there you have it. If you want to eat turkey for Christmas and still feel good about yourself, you can either shell out about £50 for a 'happy' bird, or you can spend less than a quarter of that and try not to think too hard about how the animal was reared and killed. No prizes for guessing what the majority of us do.

One could be forgiven for feeling confused about food in contemporary Britain. There is almost blanket coverage of it in the media, increasingly polarised between the 'foodie' strand, for which Rick Stein is justly renowned, and the sort of shock-horror exposé delivered that night by Jane Moore. With farmers' markets, speciality food shops and fancy restaurants popping up all over the place, we are supposedly in the midst of a gastronomic revolution, yet our everyday food culture belies this. We have never spent less on food than we do now: food shopping accounted for just 10 per cent of our income in 2007, down from 23 per cent in 1980. Eighty per cent of our groceries

are bought in supermarkets, and when we shop for food, our choices are overwhelmingly influenced by cost, well ahead of taste, quality or healthiness.[4] We are losing our kitchen skills too: half of those under the age of 24 say they never cook from scratch, and one in three meals eaten in Britain is a ready meal. Hardly a revolution.

In truth, British food culture is little short of schizophrenic. To read the Sunday papers, you would think we were a nation of rampant gastronomes, yet few of us know much about food, or care to invest our time and effort in it. Despite the recently acquired veneer of foodie culture, we remain Europe's leading nation of 'fuellies', happy to let food take a back seat as we get on with our busy lives, unconscious of what it takes to keep us fuelled.[5] We have become so used to eating cheaply that few of us question how it is possible, say, to buy a chicken for less than half the cost of a packet of cigarettes. Although a moment's thought – or a brief channel-flick to *What's Really in Your Christmas Dinner* – would soon tell us, most of us steer clear of such sobering revelations. It is as if the flesh we put in our mouths bears no relation to the living bird. We simply don't make the connection.

So how come a country of dog-owning bunny-huggers like us can be so callous about the critters we breed to eat? It all comes down to our urban lifestyles. The oldest industrialised nation on earth, we have been losing touch with rural life for centuries. Over 80 per cent of us in Britain now live in cities, and the nearest most of us ever get to the 'real' countryside – the working sort, at any rate – is when we see it on television. We have never been more cut off from farms and farming, and while most of us probably suspect, deep down, that our eating habits are having nasty consequences somewhere on the planet, those consequences are sufficiently out of sight to be ignored.

Even if we wanted to, supplying ourselves with the amount of meat we eat today with free-range animals would be next to impossible. We British have always been a carnivorous lot: not for nothing did the French dub us *les rosbifs*. But a century ago, that meant each of us ate around 25 kg of meat a year, not the whopping 80 kg we eat today.[6] Meat was once a luxury food, and leftovers from the Sunday roast – if you were lucky enough to have one – were eked out during the week. No longer. Meat today is an everyday commodity; something we

consume without thinking. Every year we eat 35 million turkeys, and at Christmas we get through 10 million birds. That's 50,000 times more than Andrew Dennis produces. Even if we could find 50,000 farmers as dedicated as he is, to rear all our turkeys the Dennis way would take some 34.5 million hectares: double the total amount of farmland the UK currently has in production.[7] And turkeys are just the tip of the iceberg – we currently eat some 820 million chickens every year in the UK. Try rearing those by hand.

The modern food industry has done strange things to us. By supplying us with cheap and plentiful food at little apparent cost, it has satisfied our most basic needs, while making those needs appear inconsequential. That applies not just to meat, but to every type of food. Potatoes and cabbages, oranges and lemons, sardines and kippers; whatever we eat, the scale and complexity of the process of getting it to us is considerable. By the time it reaches us, our food has often travelled thousands of miles through airports and docksides, warehouses and factory kitchens, and been touched by dozens of unseen hands. Yet most of us live in ignorance of the effort it takes to feed us.

No inhabitant of a pre-industrial city could have been so unaware. Before the railways, supplying themselves with food was the biggest headache cities faced, and evidence of the struggle was unavoidable. Roads were full of carts and wagons carrying vegetables and grain, rivers and docksides were packed with cargo ships and fishing boats, streets and back yards were full of cows, pigs and chickens. Living in such a city, there could be no doubt as to where your food came from: it was all around you, snorting and steaming and getting in the way. City-dwellers in the past had no choice but to acknowledge the role of food in their lives. It was present in everything they did.

We have lived in cities for thousands of years, yet we remain animals, defined by animal needs. And therein lies the basic paradox of urban life. We inhabit cities as if that were the most natural thing in the world, yet in a deeper sense, we still dwell on the land. Civilisation may be urban, but the vast majority of people in the past were hunters and gatherers, farmers and serfs, yeomen and peasants, who led predominantly rural lives. Theirs is largely a forgotten history, yet without them, none of the rest of the human narrative would have been possible. The relationship

between food and cities is endlessly complex, but at one level it is utterly simple. Without farmers and farming, cities would not exist.

As civilisation is city-centric, it is hardly surprising that we have inherited a lopsided view of the urban–rural relationship. Visual representations of cities have tended to ignore their rural hinterlands, somehow managing to give the impression that their subjects were autonomous, while narrative history has relegated the countryside to a neutral green backdrop, good for fighting battles in, but little else. It is a curious distortion of the truth, yet when you consider the extra ordinary power that rural communities could have wielded over cities had they ever realised their potential, an understandable one. For 10,000 years, cities have relied on the countryside to feed them, and the countryside, under various degrees of duress, has obliged. City and country have been locked together in an uneasy symbiotic clinch, with urban authorities doing all in their power to maintain the upper hand. Taxes have been imposed and land reformed, deals done and embargoes issued, propaganda spread and wars waged. The effort has been unceasing, and despite appearances, it still is. The fact that so few of us are aware of it is symptomatic of the political sensitivity of the issue. No government, including our own, has ever wanted to admit its dependency on others for its sustenance. Put it down to the siege mentality: the fear of starvation that has haunted cities through history.

We may no longer live in walled citadels, but we rely just as much on those who feed us as any ancient city-dweller did – arguably more so, since the cities we inhabit today are mostly sprawling conurbations on a scale that would have been unthinkable even a century ago. The ability to preserve food, as well as transport it long distances, has freed cities from the constraints of geography, making it possible for the first time to build them in such unlikely spots as the Dubai desert, or above the Arctic Circle. Whether or not one considers such settlements to be the ultimate in urban hubris, they are far from being the only ones to rely on imported food. Most cities today do precisely that, having long outgrown their local farm belts. London has imported the bulk of its food for centuries, and the modern city is fed by a global hinterland with a combined area more than a hundred times larger than the city itself – roughly equivalent in size to all the productive farmland in the UK.[8]

Meanwhile, the countryside we like to imagine just beyond our urban borders is a carefully sustained fantasy. For centuries, city-dwellers have seen nature through a one-way telescope, moulding its image to fit their urban sensibilities. The pastoral tradition, with its hedgerows and its meadows full of fluffy sheep, is part of that tendency, as is the Romantic vision of nature, all soaring peaks, noble firs and plunging gorges. Neither bears any relation to the sort of landscape capable of feeding a modern metropolis. Fields of corn and soya stretching as far as the eye can see, plastic polytunnels so vast they can be seen from space, industrial sheds and feed lots full of factory-farmed animals – these are the rural hinterlands of modernity. Our idealised and industrialised versions of 'countryside' may be antithetical, but both are products of urban civilisation. They are the Jekyll and Hyde of the natural world as modified by man.

Cities have always moulded nature in their image, but in the past their impact was limited by their size. Back in 1800, just 3 per cent of the world's population lived in towns with 5,000 inhabitants or more; in 1950 that figure was still less than a third.[9] But in the past 50 years, the situation has been changing far more rapidly. Sometime in 2006, the global population became predominantly urban for the first time, and by 2050, the UN predicts the figure will be 80 per cent. That means *three billion* more people will be living in cities in 40 years' time. With cities already consuming an estimated 75 per cent of the world's food and energy resources, it doesn't take a mathematical genius to see that pretty soon the sums won't add up.

Part of the problem is what city-dwellers like to eat. Although meat was always the staple food of hunter-gatherers and tribal herdsmen, in most societies it has been the preserve of the rich; its presence in the diet a sign of prosperity when the vast majority subsisted on grain and vegetables. For centuries, rates of global consumption have been a case of 'the West and the rest', with Americans recently topping the tables at a gut-clenching 124 kg per head per year. But now it seems that the rest are catching up. According to the United Nations Food and Agriculture Organization (FAO), the world is in the grip of a 'livestock revolution', with global consumption rising fast, particularly in the developing world, where diets have traditionally been vegetarian.[10] By

2030, the UN predicts, two thirds of worldwide meat and milk supplies will be consumed by developing nations, and by 2050, global meat con - sumption will have doubled.[11]

What lies behind the world's increasing carnivorousness? The reasons are many and complex, but in the end they come back to our animal natures. Whether or not we are vegetarians by choice, we are omnivores by nature, and meat, quite simply, is the most privileged food we can eat. Although some religions, notably Hinduism and Jainism, eschew it, most humans who have forgone meat in the past have done so mainly due to lack of opportunity. Now, however, urbanisation, industrialisation and greater prosperity are creating an appetite in many countries for the sort of meat-based diet we have long taken for granted in the West. The most startling changes are taking place in China, where 400 million people are expected to urbanise in the next 25 years. For centuries, the typical Chinese diet has consisted of rice and vegetables, with the occasional morsel of meat or fish. But as the Chinese abandon the countryside, it seems they are abandoning their rural diets too. In 1962, the average Chinese person was eating just 4 kg of meat per year; by 2005 that figure was 60 kg and rising fast.[12] The inexorable rise of burgher and burger go hand in hand.

What, you might ask, is wrong with that? If we in the West have long enjoyed a meat-based diet, why shouldn't the Chinese – and anyone else who wants to – enjoy the same? The problem is that meat is a very environmentally costly food to produce. Most animals we consume today are fed on grain rather than grass, with one third of the world's crop going to feed animals, not people.[13] When you consider that it takes an estimated 11 times as much grain to feed a man if it passes through a cow first, that is hardly an efficient use of resources.[14] It also takes a staggering *thousand* times more water to produce a kilo of beef than of wheat, which, given that fresh water is in increasingly short supply worldwide, is not good news either. According to the UN, animal farming now accounts for a fifth of global greenhouse gas emissions, with forest clearances and methane emitted by cattle high on the list of contributors. Since climate change is a key driver of water shortages, our growing taste for meat is doubly damaging.

The impact of China's urbanisation can already be felt globally. With

much of its land mass covered by mountain and desert, China has always struggled to feed itself, and as its population urbanises, it is fast becoming dependent on land-rich countries such as Brazil for its food. China is already the world's largest importer of grain and soya, and its demand is growing exponentially. In the 10 years to 2005, its soya imports from Brazil increased more than a hundred fold, and in 2006, the Brazilian government agreed to add another 90 million hectares to the 63 million already in production.[15] Needless to say, the extra land that is to go under the plough isn't any old scrubland nobody cares about. It is Amazonian rainforest, one of the richest and most ancient natural habitats on earth.

If the global future is urban, as every indication suggests it is, we need to take an urgent look at what that means. Until now, cities have existed largely on their own terms, commanding resources and consuming them more or less at will. That is going to have to change. The feeding of cities has been arguably the greatest force shaping civilisation, and it still is. In order to understand cities properly, we need to look at them through food. That, in essence, is what this book does. It suggests a new way of thinking about cities, not as autonomous, isolated entities, but as organic ones, bound by their appetites to the natural world. We need to put away our one-way telescopes and think holistically: use food to take a fresh look at how we build cities, feed them and dwell in them. In order to do that, we have to understand how we got here in the first place. We need to go back to a time before cities even existed; to a time when it was grain, and not meat, that held everyone's attention.

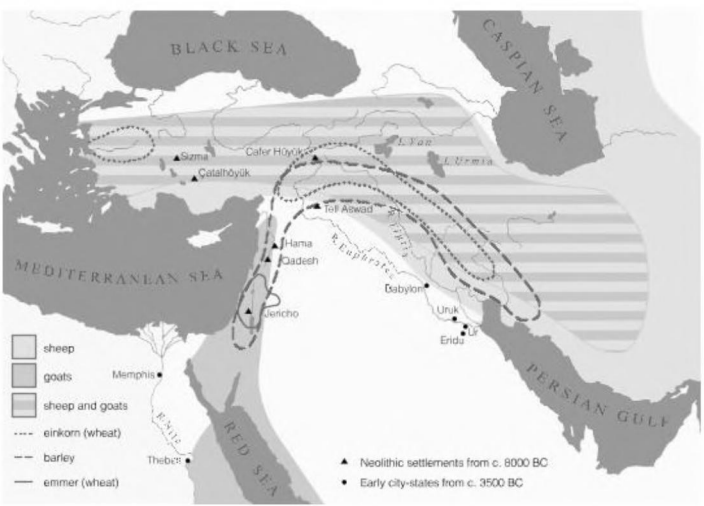
A New Food

Corn is a necessary; silver only a superfluity.
Adam Smith[16]

The origins of agriculture are obscure, but what can be said with some degree of certainty is that before farming came along, there were no cities. Half a million years before grain came on the menu, our

ancestors were nomadic hunter-gatherers who spent their lives tracking the annual migrations of the beasts that formed the basis of their diet. Men had learned to shape the natural world with fire, using it to burn clearings in the forest to improve grazing for animals, and presumably to ward off predators too. Fire also helped our ancestors to survive in inhospitable habitats, such as Europe during the last Ice Age; and it must have provided at least some comfort in an otherwise bleak existence (one presumes woolly mammoth tasted better roast than raw). But despite man's command over fire, his life was still essentially peripatetic. Permanent settlements were about as much use to him as they were to the animals he hunted.

Around 12,000 years ago, all that began to change. As the last Ice Age retreated northwards, it left behind it a swathe of land so rich in natural foods that it has been dubbed 'the Fertile Crescent'. Running northwards from the Nile Delta, along the eastern seaboard of the



The Fertile Crescent.

Mediterranean as far as southern Anatolia (modern Turkey) and then southwards again through Mesopotamia (Iraq), the territory blossomed into an arcadia of oak forests and wild grasslands (the ancestors of wheat and barley) grazed by the forebears of the modern sheep and goat. The land was bursting with good things to eat, although it may not have seemed that way to its human inhabitants. To people used to a meat-based diet, the idea of eating wild grasses can't have been too appealing. But the growing pressure of population, together with the migration of larger animals northwards, probably forced their hand.

The first attempts of early farmers to harvest wild grain must have been frustrating, to put it mildly. The ears had to be gathered at the exact moment of ripening, or they would burst, scattering their seed and leaving nothing but an inedible husk behind. Pioneer harvesters probably set up temporary camps next to the fields in order to make sure that they were there at the critical moment; a practice that over the course of millennia led to the establishment of settled villages, such as those found in Palestine from around 10,000 BC. These villages, consisting of groups of circular stone-walled huts, suggest that early village life combined hunting and herding with the intensive gathering of wild grain, which would be laboriously processed by winnowing, threshing and stone-grinding, to make the world's first attempt at bread – or its first mashed-up grain paste, at any rate.[17]

The poor state of the villagers' teeth suggests that this earliest of processed foods made somewhat challenging eating – yet its discovery was to prove pivotal. For the first time in history, here was a food (albeit not a very palatable one) that could be gathered and stored in large enough quantities to allow at least some people, some of the time, to live in permanent settlements. Grain, in other words, was the means by which the land could be made to yield a food surplus – one which over the course of two millennia became increasingly secure, as the intensive gathering of wild grasses evolved into the conscious management of crops, through the saving and scattering of seed: until it became, in other words, what we would now describe as farming.

Jericho was an early settlement that characterised this period of transition from rural to urban life. Founded beside an oasis of the River Jordan in Palestine around 8000 BC, its inhabitants fed themselves partly through hunting, and partly through the intensive gathering of wild seeds, which they ground up to make flour. Life in Jericho was seasonal: the town was fully occupied during the harvest, but at other times its inhabitants would abandon it to go foraging in the countryside. The biblical account of Jericho's downfall, which refers to it being 'shut up' by divine intervention prior to Joshua's destruction of its walls, alludes to its heavy dependence on its rural links.[18] Without being able to lay aside emergency reserves of grain, being cut off from its food supply was fatal. Nobody is quite sure what finally did for Jericho, but whether earthquake, famine, or the playing of magic trumpets spelt its end, the event took place sometime around the late fourteenth or thirteenth century BC, by which time the town had survived for some 6,500 years. Not bad for a semi-rural mixed farming community.

Whether or not settlements such as Jericho count as cities is a matter of debate among archaeologists. The consensus is that they don't, because they fail to display the division of labour characteristic of urbanity. Nevertheless, Çatalhöyük in Anatolia, dating from about 7000 BC, at least marks the beginnings of urban civilisation. Çatalhöyük's many decorated shrines and elaborate craftwork suggest it had a rich cultural and religious life, indicating that having a stable, reasonably predictable food source gave people the freedom to indulge in non-essential creative pursuits: the characteristic activities of urban man.

Uruk, founded by the Sumerians in southern Mesopotamia around 3500 BC, is the first settlement that even the strictest of archaeologists agree was a proper city. Along with its neighbours Ur, Larsa and Nippur, it had what is now considered to be the *sine qua non* of fully fledged urbanism: zoning. Not the most exciting sounding attribute perhaps, but critical to the way the city was run. Uruk can claim to be the world's first true city, not because of its magnificent temples and monuments, but because its citizens were employed in specialised tasks, including the running of a civic administration.[19] To judge from its

records, the latter was devoted almost entirely to managing the agricultural hinterland, and many experts believe it was the complexity of this task that led the Sumerians to invent writing.

In many ways, the location of this first attempt at full-blown urbanity was far from ideal. The land's fertility relied on the annual flooding of the Tigris and Euphrates rivers, which although rich in minerals from the northern hills were also highly unpredictable. The spring floods came too late for the growing season, so the floodwater had to be stored for later use. The city solved this problem by building a series of massive levees – the first municipal public works ever undertaken – to contain the river, and sophisticated irrigation systems to distribute the water evenly between outlying farms. The earthworks required constant upkeep and a massive investment of time and effort, but they were the means by which the flood-ravaged semi-desert was transformed into a blossoming oasis. Date palms flourished on the levees, along with a range of vegetables and legumes to keep any modern chef happy: chickpeas, lentils and beans; onions, garlic and leeks; cucumbers, cress, mustard and lettuce; dates, figs and grapes. Hardier crops such as wheat, barley and sesame grew further afield in irrigated paddocks.[20]

By moulding the natural world to suit their needs, Sumerian cities established the basic ground rules of urban civilisation. Their municipal market gardens were the world's first artificial landscapes, showing how nature might be modified to serve urban man. City and country combined to form a single entity, the city-state, and their mutual dependence, so clear in the ancient world and so obscure in ours, has underpinned urban existence ever since.

Man and Grain

Nobody in the ancient world ever took their food for granted. The fact that our words 'culture' and 'cultivate' share the same stem (the Roman *cultus*) tells its own story. Cultivation and civilisation in the Graeco-Roman world were inextricably linked. The ancient Greek word *sperma* referred to the seed of both man and grain, and the two were bound together in reality and myth. To Homer, man was, simply,

Romans viewed with disdain, or even dread. To Roman eyes, nature was split into two: the tame and the untamed, the productive and the unproductive, the good and the bad. It was a view that would persist as urbanity strengthened its hold on Western culture, but despite the Romans' best efforts, it never convinced the tribes of northern Europe.

Away from the Mediterranean, Europe was still covered in dense forest, and Teutonic myth bound men to trees, not grain. Northern forests were imbued with the spirit of the hero Wotan, whose self-sacrifice, hanging himself on a tree, led to his miraculous rebirth as a life-giving god. The event was celebrated by Germanic tribes with blood sacrifices; a practice the Roman historian Tacitus, rather two-facedly, declared repellent. Celts and Germans spent their lives hunting and fishing, and pasturing horses, cows and pigs in the forest. Indeed, pigs were so important to the northern economy that from the seventh century onwards, forests were measured not in terms of their physical dimensions, but by the number of animals they could sustain. With all this natural bounty, there was little need to build cities or engage in the tedious business of tilling the earth. As Caesar remarked of the Germans, 'for agriculture they have no zeal, and the greater part of their food consists of milk, cheese and flesh.'[24] Tacitus noted that the northerners preferred to live close to nature: 'None of the German tribes live in cities,' he wrote, 'they live separated and scattered, according as spring water, meadow or grove appeals to each man.'[25] Yet as Seneca observed, this natural lifestyle seemed to suit the Germans: 'They nourish themselves on the wild beasts which they hunt in the forest. Are they unhappy? No, there is no unhappiness in that which has become natural through habit; what has become necessity soon becomes pleasure . . .'[26]

The Roman view of Germania, a mixture of repulsion and admiration, summed up the cultural tensions between north and south. While life in the forest appeared uncivilised to the orderly Roman mind, it clearly offered protection from the urbane decadence to which Rome was then succumbing. The disdain was mutual, even if the admiration wasn't: when the 'barbarian' hordes came sweeping down across Rome's carefully manicured landscapes, they saw little there to engage them. Cities held no value for the forest-dwelling Germans, nor for the

nomadic horsemen of the eastern Steppes, the Huns, who plundered them for portable treasures before sacking them and riding on.[27]

Who Owns the Land?

> The first man who, having enclosed a piece of ground, bethought himself of saying *This is mine*, and found people simple enough to believe him, was the real founder of civil society.
>
> Jean-Jacques Rousseau[28]

Cities may not have been universally appealing to early Europeans, but land was a commodity that everybody valued, whether hunter, nomad or city-dweller. The difference was in the way they used it. A German tribesman might keep a few cows and pigs, but he made little investment in feeding them. He might make a clearing in the forest to create pasture for cattle, or encourage wild deer to come there to graze, but that was about it. The vastness of the forest belonged to nobody. It was common territory, in which everyone was free to go and forage, raise pigs or hunt. But such an open-ended approach could never have worked in the agricultural south. Cultivated land didn't just offer up nuts, berries and pigs out of the blue – it required constant hard work, and needed to be protected. It had to be owned.

From the beginning, the cultivated farm belts around cities were owned by urban elites. Rich Sumerians leased out land to tenant farmers in return for rent or labour, the latter being especially valuable during the harvest, when there was invariably a shortage of man-power.[29] Similarly, pre-democratic Athens' rural hinterland was controlled by a land-owning elite, the Areopagoi, who used slave labour to produce oil and wine, much of it for export. The arrangement nearly caused the city's downfall, since the Areopagoi didn't generally bother with growing the less lucrative, yet far more necessary, grain. Yet despite their greed, the Areopagoi managed to hang on to power after the city became a democracy, largely because the law-giver Solon was one of their kind, and decreed that only the wealthiest citizens (i.e. landowners) should be allowed to hold public office.

In Rome, land ownership was not a prerequisite to power, but in a city obsessed with social prestige, it certainly helped. Many powerful Romans owned villas close to the capital, allowing them to enjoy the contemplative life in the countryside, as well as to attend to business in the city. Pliny the Younger's description of his seaside villa near Ostia, with its shady porticoes, fragrant vines and gentle sea breezes, reads like something out of a modern holiday brochure. But Roman villas were not just pleasant retreats: the majority were also working farms that used slave labour to produce high-value crops such as fruit and vegetables, poultry, fish and snails for the urban market. The agronomist Varro hailed the huge profits to be made from this *pastio villatica* (villa farming), advising farmers to focus on supplying 'a public banquet or somebody's triumph . . . or the *collegia* dinners that are now so numerous that they make the price of provisions go soaring'.[30] By Augustus' day, the suburbs of Rome were an endless sprawl of commercial farms, described by the Greek visitor Dionysius of Halicarnassus as merging seamlessly with the city:

> If anyone wishes to estimate the size of Rome by looking at these suburban regions, he will necessarily be misled for want of a definite clue by which to determine up to what point it is still the city and where it ceases to be the city; so closely is the city connected with the country, giving the beholder the impression of a city stretching out indefinitely.[31]

Rome, of course, was a monstrous aberration. For a thousand years after its fall, urban civilisation would wane in Europe, as 'barbarian' hunting cultures restored the concept of forest as privileged territory. However, by the ninth century, the forest no longer seemed limitless. Clearances for agriculture had encroached on its vastness, and influxes of tribes from the east brought new pressures to bear. Disputes over territory became increasingly common as various powers, including the monasteries, tried to secure exclusive rights over the forest for themselves.

The spread of Frankish and Gothic tribes brought a new understanding of the forest to northern Europe. Both cultures took hunting

very seriously indeed, linking social prestige directly to its rituals. The right of Norman kings to hunt was considered a sacred privilege, and to meddle with their aim was a treasonable offence. Once William the Conqueror had defeated Harold at Hastings, he lost no time in annexing a quarter of his new kingdom as 'royal forest', which, as the name suggests, was territory in which the king, and only he, was allowed to hunt. Punishments for foraging and poaching were severe, ranging from the removal of one's eyes and testicles for the killing of a deer, to the less imaginative but undeniably effective penalty of death. All this would have been harsh enough, were it not for the fact that William's 'forest' included great swathes of countryside (including the entire county of Essex) which were not wooded at all, but included, as the historian Simon Schama has pointed out, 'tracts of pasture, meadow, cultivated farmland, and even towns'.[32] Quite what Essex Man, used to snaring himself the odd rabbit for the pot, was supposed to do under this draconian regime was anyone's guess. It was tantamount to a life sentence of covert criminality to those who had always made their living from the woods.

The Norman land-grab signalled the start of feudalism in England, and a system of land management that would dominate in some parts of Europe until well into the nineteenth century.[33] Feudalism came in many forms, but typically it consisted of large manorial estates or strips of land around villages or towns, which were owned by lords and worked by peasants, whose privileges depended largely on how their numbers matched up to the demand for labour. After a major plague, such as the Black Death, which wiped out a third of the population in Europe during the 1340s, a peasant's life could be tolerable. At such times, landowners might see their way to extending peasants' rights, allowing them to keep a proportion of their own produce, or even granting them ownership of their land, in exchange for military or other obligations. But when labour was plentiful, peasants' lives could be bleak, and they were often treated as little better than slaves. The serfs who worked on Russian grain estates, for instance, could be branded or sold at public auction, and one law of 1649 allowed the torture of children who denied their feudal bond to lord and land.[34]

Feudalism didn't spread much happiness, nor was it very good at producing food; it was the latter failing, rather than the numerous peasant revolts that characterised its history, that would eventually prove its downfall. As a system of land management, feudalism was just about capable of sustaining an essentially rural population. As a means of feeding cities, it was next to useless.

Town and Country

By early medieval times, urban civilisation was making a comeback in Europe. Ever since the fall of Rome, monasteries had provided some civilised sanctuary amidst the lawlessness that raged over the continent, and by the ninth century, thanks chiefly to the Christian conversion of the Frankish king Charlemagne, they had gained an impressive foothold. Some were so large, they were effectively towns in their own right: the monastery of Tours, with a population of 20,000, was one of the largest settlements in Europe.[35] With their close-knit, self-sufficient communities, protective walls and market gardens, monasteries provided the template for a new kind of city. From the eleventh century onwards, fortified 'communes' began to appear in northern Italy and Spain, France, Germany and the Low Countries, reviving the ancient city-state in a new, Christian configuration.

One such commune, Siena, has a council chamber with one of the finest views in all of Italy. A large rectangular room set high within the city's thirteenth-century town hall, the Sala dei Nove has a great window that looks out over a classic Tuscan landscape, with its gently rolling patchwork of vineyards, olive groves, villas and cypresses. That the landscape has barely changed in nearly 700 years becomes evident when one looks at the frescoes decorating the room, painted by Ambrogio Lorenzetti in 1338. To the left of the window is a fresco entitled *The Effects of Good Government on City and Country*, depicting a tidy, well-maintained Siena surrounded by a neat landscape just like the one outside. Peasants till the fields, two huntsmen set off with a pack of orderly hounds, a farmer enters the city with mules laden with corn, and another drives a flock of sheep to market. City and country exude peace

their inhabitants, perfectly formed, often being described as 'fair' and 'pretty'.[41]

However, things were about to change. As cities grew larger (and smoggier, thanks to the increasing use of coal), their perceived moral stock began to decline. In 1548, Hugh Latimer, Bishop of Worcester, delivered a lacerating sermon on the steps of St Paul's, accusing Londoners of 'pride, covetousness, cruelty, and oppression', and assuring them that 'if the ploughmen in the country were as negligent in their office as prelates be, we should not long live, for lack of sustenance'.[42] Latimer's use of the plough as an image of virtue was to become a recurrent theme in centuries to come. As cities prospered and glittered, the rural view of them became increasingly jaundiced, as the admirably succinct 1630 ditty 'The Poor Man Paies for All' suggests:

> The King he governs all,
> The Parson pray for all,
> The Lawer plead for all,
> The Ploughman pay for all,
> And feed all.[43]

By the seventeenth century, it wasn't just country folk who found cities distasteful. Poets and philosophers were also starting to show a preference for the countryside; for, as the prominent Quaker William Penn put it, 'there we see the works of God; but in cities little else but the works of men'.[44] Penn demonstrated his love of nature by departing for somewhere he could get his paws on plenty of it: North America, a large tract of which (Pennsylvania) still bears his name.[45] While Penn and others sailed off to pastures new, the nation they abandoned remained in the grip of a pastoral obsession. The purity and innocence of the countryside were extolled in paintings, poetry and plays, such as John Fletcher's *The Faithful Shepherdess*, performed at court in 1633 with the inclusion, at the author's insistence, of real shepherds and sheep. But as the historian Keith Thomas pointed out in his book *Man and the Natural World*, such fantasies were born of the increasing distance between town and country: '. . . the growing tendency to disparage urban life and to look to the countryside as a symbol of

innocence rested on a series of illusions. It involved that wholly false view of rural social relationships which underlies all pastoral.'[46]

Meanwhile, the countryside of Stuart England was fast becoming a manmade landscape, as it scrambled to meet the cities' growing demand for food. Agricultural improvement was the new moral imperative; the question was, how was it to be achieved? The answer came from the one nation that was predominantly urban earlier than England: the Netherlands. By the mid seventeenth century, more than half the Dutch lived in towns, and the land (much of which had been reclaimed from the sea) was working overtime to feed the population. Dutch farms consisted of small, sandy plots made fertile by deep digging, con stant weeding and plenty of fertiliser, much of the latter provided by the towns in the form of wood ash and manure. Country and city were linked by a close network of canals, which carried waste from the towns to the farms and brought food back in the opposite direction. But perhaps the most important legacy of Dutch farming was the use of fodder crops, both to improve the soil and to provide winter feed for animals, which hitherto had to be slaughtered in late autumn. The value of these techniques was noted by English farmers, particularly those in the south-east, who enjoyed close trading links with the Dutch. The planting of fodder crops, popularised by Charles 'Turnip' Townshend at the start of the eighteenth century, was a symbol of the English Agricultural Revolution, but it had been practised in the Netherlands – and parts of East Anglia – for decades before he was even born.

Robbing the Commons

As Jean-Jacques Rousseau would later note, when men invest a lot of effort in land, they tend to want to own it. As marshes were drained and trees felled in England after the Civil War, the enclosure of common land was actively encouraged by Parliament, with the result that the traditional feudal landscape – large, open fields with village-based strip-farming – began to disappear under thousands of acres of neatly hedged, privately owned rectangles. The rural scenes that we think of today as typically English were the result of this particular land-grab, the like of

which had not been seen since the days of the Normans. The comparison was not lost on those who witnessed it, as one contemporary verse suggests:

> The law locks up the man or woman,
> Who steals the goose from off the common,
> But leaves the greater villain loose
> Who steals the common from the goose.[47]

To make matters worse, this second dispossession of rural England was not being perpetrated by some foreign despot, but by the nation's own parliament. Although the changes were arguably necessary in order to feed the expanding urban population, the speed of change, and the manner of it, was brutal.

The upheavals brought the 'land question' once more to the fore, with battle lines drawn between Sir Robert Filmer, champion of the 'Divine Right' school of thought, and John Locke, co-founder of the Whig Party and one of England's foremost political philosophers. Filmer's logic, published in his treatise of 1680, *Patriarcha, or the Natural Power of Kings*, went thus: God had given the earth to Adam, and since Adam was the 'first monarch' of mankind, all monarchs who succeeded him inherited the earth by divine right. Stuff and nonsense, said Locke: Adam may have inherited the earth, but he did so on behalf of *all* mankind, not just on behalf of himself and his offspring. Locke's refutation of Filmer took up the whole of the first of his *Two Treatises of Government*, written in 1690. Having demolished Filmer in the first volume, Locke spent the second pondering how, if the earth belonged to everyone, any individual could claim a piece of it for himself. The answer, he concluded, was by investing labour in it:

> He that is nourished by the acorns he picked up under an oak, or the apples he gathered from the trees in the wood, has certainly appropriated them to himself. Nobody can deny but the nourishment is his. I ask, then, when did they begin to be his? when he digested? or when he ate? or when he boiled? or when he brought them home? or when he picked them up? And it is plain, if the first gathering

made them not his, nothing else could. That labour put a distinction between them and common.[48]

It followed that if a farmer tilled the land, he earned the right to call it his own. However (and here was the rub), this was only true *provided each man took only what he needed*, and no more. A farmer could enclose his land, so long as he was not greedy, and left enough for others. Locke's ideas – that each man had the natural right to liberty, freedom and subsistence – would form the basis of the social contract at the heart of liberal democratic thought; and they were about to be put to the test in America, where, theoretically at least, there should have been enough land to go round. As it turned out, there wasn't. The invidious treatment by European settlers of the Native Americans (who, thanks to their hunter-gatherer lifestyles, had never felt the need to lay claim to their land by planting hedges around it) soon put paid to any notion that the New World might deal with the land question any more equably than the old one had.

Part of the problem, of course, was that Locke's ideas were formulated from a farming perspective, not that of a hunter-gatherer. While Locke's concept of liberty was eventually bound into the American Constitution through Thomas Jefferson's 1776 Declaration of Independence, Native Americans forfeited their right to land because they lived *on* it, not off it. They trod too lightly to put down markers that Europeans might have recognised or understood. As it was, the concept of common land was as doomed in the vastness of North America as it was in the tiny island nation that sought to colonise it.

War of the Wens

While Native Americans were being robbed of their land in the New World, the peasant dream of a plot of one's own was fast disappearing in the old one. The process of enclosure in England accelerated rapidly during the eighteenth century, resulting in the annexing of some million hectares by the century's end.[49] Yet progress was still too slow

for the nation's greatest champion of agricultural reform, Arthur Young. Surveying the country in 1773, Young declared the amount of land that remained uncultivated 'a disgrace', announcing his intention to bring 'the wastelands of the Kingdom into culture' and 'cover them with turnips, corn and clover'.[50] Although not raised a farmer, Young acquired an Essex farm in 1767, where he conducted a series of technical experiments, publishing the results in his *Annals of Agriculture*, which were so well received they ran to 45 volumes, and even enjoyed the occasional anonymous contribution from King George III. As his fame spread, Young took to travelling, preaching agricultural reform throughout Britain, France and Italy, lecturing to rapt audiences wherever he went.

For Young and his followers, the growth of cities represented a fabulous opportunity for farmers to modernise; to develop what Young called 'agriculture animated by a great demand'.[51] But his enthusiasm was not universally shared. To William Cobbett, gentleman farmer, political essayist and tireless campaigner on behalf of the rural poor, cities were 'wens': parasitical boils that consumed everything in their path. Those who lived in them were little better: they were the undeserving and ungrateful beneficiaries of others' sweat and toil. 'We who are at anything else,' he wrote, 'are deserters from the plough.'[52] Cobbett, unlike Young, was the son of a Surrey smallholder, and he identified personally with the agricultural labourers he considered 'the very best and most virtuous of all mankind'.[53] He dedicated himself to their cause, publishing a stream of invective in his paper, the *Political Register*, against the systems and policies that were destroying rural life. Cobbett's disgust for London was such that he could barely bring himself to mention it by name, dubbing it instead 'the Great Wen'. Yet since his political life forced him to spend a considerable amount of time there, he put it to good use, going on a series of exploratory journeys to see the effects of urbanisation for himself. His subsequent account, published as *Rural Rides* in 1830, emerged as a bitter diatribe against cities:

> Have I not, for twenty years, been regretting the existence of these unnatural embossments; these white-swellings, these odious wens,

conclusion that it 'was iron and corn which first civilised men, and ruined humanity'. For Rousseau, agriculture was as much to blame for man's misfortune as cities were. He warmed to his theme with a series of romantic novels: thinly disguised polemical tracts whose innocent heroes and heroines led lives of exemplary purity in the mountains, living on fruit, milk and honey.[57] Unsurprisingly, these forerunners of Heidi didn't go down too well with some of Rousseau's Parisian contemporaries, Voltaire among them, who greeted the author's announcement that he was heading for the mountains in order to practise what he preached with howls of derision. But it was Rousseau's view that would prove the more enduring. By disparaging cultivated landscape in favour of wilderness, he paved the way for Romanticism, creating a schism in the urban view of nature that helped to shape the modern world.

The Invisible Land

Any remaining pastoral fantasies in England were soon to be swept away by the onset of industrial farming. Half the iron produced during the eighteenth century went to make ploughs and horseshoes, and from the mid nineteenth century onwards, farm machinery began to transform English agriculture. Horse-drawn drills and reapers, and later steam-driven threshers, drastically reduced the number of people needed to work on the land, while various industrial by-products, such as the lime-rich slag created by steel production, allowed the manufacture of artificial fertilisers that could double farmers' yields. Food was being produced in larger quantities than ever before, and by fewer people; and as rural workers headed to the cities, the social bonds that held rural communities together – and linked city to country – began to disintegrate. The gap between the feeders and the fed was widening, and it was about to get a whole lot wider.

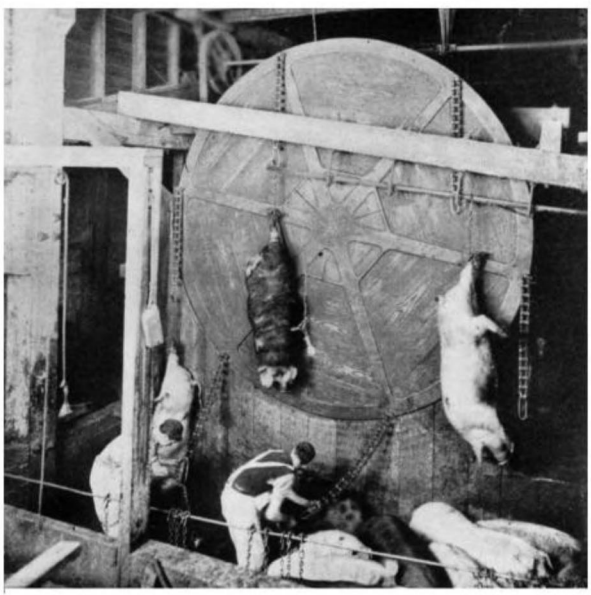
Ten years after Cobbett's *Rural Rides* came an invention that would render all resistance to urban expansion useless. In the space of a few years, the railways removed all the constraints that had hitherto chained cities to their rural back gardens. From now on, cities would be able to

get their food from more or less anywhere. The food economy was about to go global, and nowhere was the effect more dramatic than in the American Midwest, a vast prairie ripe for exploitation. By the mid nineteenth century there were some million and a half farmers in North America, most of them European settlers who had acquired their land along Lockean principles, by investing years of labour in it. Their combined grain-producing potential was enormous, but with the Appalachian Mountains in the way, there was no easy way of transporting the grain to the East Coast. The Erie Canal, a 360-mile-long, 83-lock 'eighth wonder of the world', completed in 1825, had shown the potential of such a connection, providing a water passage from the interior to New York. Thanks to its inland empire, New York soon outstripped its rivals Boston and Philadelphia, earning itself the nickname 'Empire State'. But it was only when the Appalachians were breached by the railroads during the 1850s that the true impact of American grain would be felt on the global stage.

The railroads brought thousands of acres of previously inaccessible farmland into the food chain for the first time, delivering efficiencies of which Arthur Young could only have dreamt. The American prairies weren't worked by serfs enslaved by a noble lord or obliged to feed their local populace. They were commercial enterprises whose temples were the towering elevators that transferred their grain into ships bound for distant markets. Limitless quantities of cheap grain began to arrive in Europe in the 1870s, sparking an agricultural depression from which the continent would never fully recover. Rural Britain was hit particularly hard: with more than half the British population living in cities, food shortages were acute, and feeding the urban poor was a more urgent government priority than protecting local farmers. While most other European countries imposed import tariffs on American grain (Bismarck tripled import duties in Germany in order to protect its powerful landowning classes), Britain went the other way. Having abandoned protectionism with the repeal of its Corn Laws in 1846, it once again felt the pain of agricultural reform as a short sharp shock, rather than dragging out the inevitable.

Grain wasn't the only cheap food coming out of America. The expense and difficulty of feeding cattle had always meant that meat was

a luxury food, but with a surplus of feed available, it now became possible to raise animals in artificial feed lots, preserving their carcasses after slaughter by 'packing' them with grain and salt. By the early nineteenth century, Cincinnati was the centre of the new 'meat-packing' industry, processing thousands of hogs and dispatching them down the Ohio River to the East Coast. The hogs were 'disassembled' in purpose-built slaughterhouses, where they were slaughtered, butchered, cured and canned, all along a single conveyored production line. There was no room for sentimentality in such a process: the animals were treated brutally, shackled to a wheel by their hind legs and dragged backwards before being hoisted up in the air to have their throats cut without prior stunning. Cruel though it was, the automated



A state-of-the-art Chicago packing house, early twentieth century.

disassembly line was certainly efficient: by 1848, Cincinnati (or 'Porkopolis', as it became known) was the undisputed meat-packing capital of the world, processing half a million hogs a year. Its position seemed assured – until the railroads came along and nullified its strategic advantage at a stroke. Cincinnati was forced to cede its mantle to Chicago, whose Union Stockyards took meat-packing to a whole new level. Covering more than a square mile and employing some 75,000 people, they were a city within a city, with their own water and electricity supply, bank, hotel and even newspaper, the *Drovers' Journal*. According to the *Chicago Tribune*, the Stockyards were the 'eighth wonder of the world' (which perhaps should have been the ninth, since the Erie Canal had already been built). In any case, they were certainly prodigious. By 1872, they were processing three million cattle, hogs and sheep annually, rising to 17 million by 1905.

Grain was the food that made the ancient city, but meat made the industrial one. Factory workers needed higher-octane fuel to get them through the day, and meat was what they demanded for their dinner. British meat consumption increased three fold in the 20 years after 1870, with most of the increase accounted for by imported meat. Meat-packing made cheap meat widely available for the first time, so setting the scene for modern urban consumption, and the ruthless efficiencies and economies of scale necessary to satisfy it. America wasn't the only nation getting into factory food production either. Two European nations, Denmark and the Netherlands, saw an additional opportunity presented by cheap American grain. Both countries began to build factory farms in which pigs and chickens could be reared intensively on imported feed, exporting the results to the British in the form of bacon and eggs, as both still do today.

For the first time, cities had a cheap, reliable source of food. Prices plummeted, revolutionising living standards for the urban poor. So, did city-dwellers burst with gratitude, composing grateful sonnets to the glorious meat-packers of the New World? Not a bit of it. Perhaps understandably, people preferred to marvel at the engineering feats of the age, rather than contemplate the industrialised rendition of pork fat, even though the latter was having just as great an impact on their standard of living. Industrialisation might have brought people cheap

food, but by denaturing farming, it also created an irreparable gulf between the feeders and the fed. That left just one kind of 'nature' capable of capturing the urban imagination: wilderness. Rousseau had been ahead of his time.[58]

Back to the Woods

By the mid nineteenth century, the cities that were once extolled as centres of beauty had descended into smog-ridden hell-pits. While writers such as Dickens, Hugo and Zola chronicled the degradations of industrial urbanity, others took a leaf out of Rousseau's book, wandering off to rediscover the wild. Prominent among them was the American proto-environmentalist Henry David Thoreau, who spent two years living in a rustic cabin in the Massachusetts woods, recording his experiences in *Walden, or Life in the Woods*, published in 1854. The book's central theme was a plea for men to abandon the complexities of urban existence and embrace a simpler life closer to nature. Thoreau tried to lead by example, detailing his uneventful days spent cultivating his bean patch, listening to birds, and bathing in the eponymous Walden Pond, while ruminating on the shortcomings of the civilised society he had left behind: 'Our life is frittered away by detail. Simplicity, simplicity, simplicity! I say, let your affairs be as two or three, and not a hundred or a thousand.'[59]

Although Thoreau made much of his self-imposed exile, in reality his hut was only a mile and a half from his native town of Concord, where he would repair occasionally for a bit of human company, or to pick up supplies. Not that such details made any difference to his readers. To them, Thoreau was the true prophet of living wild, his example a clarion call to lead a purer, truer life. *Walden* might not have been the instant success Thoreau had hoped for, but after his death, its popularity grew steadily, as its message, 'in wilderness is the preservation of the world', struck the perfect chord with the nascent environmental movement.

Thoreau may have heard the call of the wild, but it was the Scottish-born geologist John Muir who became its most effective mouthpiece.