

Bill Bryson

At Home

A SHORT HISTORY OF PRIVATE LIFE



Notes
and
sources

Chapter 1: The Year

- p. 9 In the autumn of 1850, in Hyde Park in London, there arose a most extraordinary structure: a giant iron and glass greenhouse covering nineteen acres of ground and containing within its airy vastness enough room for four St Paul's Cathedrals: The story of London's Great Exhibition is thoroughly and entertainingly told in Michael Leapman's *The World for a Shilling: How the Great Exhibition of 1851 Shaped a Nation*. For historical context, *The Year Is 1851* by Patrick Howarth provided much information. The sources for other details are specified below.
- p. 10 The Building Committee of the Royal Commission for the Great Exhibition of the Works of Industry of All Nations consisted of four men – Matthew Digby Wyatt, Owen Jones, Charles Wild, and the great engineer Isambard Kingdom Brunel: Hix, *The Glass House*, p. 133.
- p. 11 The whole was to be capped off by Brunel's contribution: an iron dome two hundred feet across: *New Yorker*, 'The Great Iron Ship', 19 September 1953.
- p. 11 Into this unfolding crisis stepped the calm figure of Joseph Paxton: Although Paxton's architecture has been much written about, for instance in *The Works of Sir Joseph Paxton* by George F. Chadwick, Joseph Paxton himself was rather neglected as a biographical subject until the publication in 2004 of the excellent *A Thing in Disguise: The Visionary Life of Joseph Paxton* by Kate Colquhoun, from which many of the facts here are taken.
- p. 12 This so captivated the American Frederick Law Olmsted that he modelled Central Park in New York on it: See Rybczynski, *A Clearing in the Distance*.
- p. 12 In 1849, the head botanist at Kew sent Paxton a rare and ailing lily, wondering if he could save it: The plant was *Victoria amazonica*. One can be seen growing today in the small hothouse at the Botanic Gardens in Durham. The ribbing on its back bears an uncanny resemblance to the lattice of supports on the Crystal Palace exhibition hall.
- p. 12 While chairing a meeting of a committee of the Midland Railway, he doodled a rough design on a piece of blotting paper and had completed drawings ready for review in two weeks: *New Yorker*, 'The Great Iron Ship', 19 September 1953.
- p. 13 At its heart was a single component – a cast-iron truss 3 feet wide and 23 feet 3 inches long: Hix, *The Glass House*, p. 109.
- p. 13 A special mobile platform was designed that moved along the roof supports enabling workmen to install 18,000 panes of glass a week – a rate of productivity that was, and is, a wonder of efficiency: Picard, *Victorian London*, p. 264.
- p. 13 To deal with the enormous amount of guttering required – some twenty miles in all – Paxton designed a machine, manned by a small team, that could

attach two thousand feet of guttering a day – a quantity that would previously have represented a day's work for three hundred men: Leapman, *The World for a Shilling*, p. 95.

- p. 13 Paxton was very lucky in his timing, for just at the moment of the Great Exhibition glass suddenly became available in a way it never had before: Clifton-Taylor, *The Pattern of English Building*, pp. 398–401.
- p. 13 This allowed for the first time the creation of really large panes of glass, which made shop windows possible: Owen, *Sheetrock & Shellac*, pp. 166–7.
- p. 14 Suddenly glass of a good size could be produced economically in limitless volumes: Wilson and Mackley, *Creating Paradise*, pp. 194–5.
- p. 14 Allied with this was the timely abolition of two longstanding taxes: the window tax and glass tax (which, strictly speaking, was an excise duty): A concise summary of building taxes can be found in Clifton-Taylor, *The Pattern of English Building*, pp. 397–8, and Parissien, *Palladian Style*, p. 148.
- p. 14 and was sufficiently punishing that people really did avoid putting windows in buildings where they could: Ayres, *Domestic Interiors*, p. 79.
- p. 14 The bricked-up window openings that are such a feature of many period buildings in Britain today were once usually painted to look like windows: Brunskill, *Brick Building in Britain*, p. 45.
- p. 14 The second duty, introduced in 1746, was based not on the number of windows but on the weight of the glass within them: Parissien, *Palladian Style*, p. 148.
- p. 14 They are a consequence of the type of glass-making that produced what was known as crown glass: Clifton-Taylor, *The Pattern of English Building*, p. 395, and Girouard, *Life in the English Country House*, pp. 166–7.
- p. 14 The glass levy was abolished in 1845, just shy of its hundredth anniversary, and the abolition of the window tax followed, conveniently and fortuitously, in 1851: Planel, *Locks and Lavatories*, p. 37.
- p. 14 Just at the moment when Paxton wanted more glass than anyone ever had before, the price was reduced by more than half: Girouard, *Life in the English Country House*, p. 21.
- pp. 14–5 The finished building was precisely 1,851 feet long (in celebration of the year), 408 feet across and almost 110 feet high along its central spine – spacious enough to enclose a much admired avenue of elms that would otherwise have had to be felled: Daumas, *A History of Technology and Invention*, p. 438, and Hibbert, *London: The Biography of a City*, p. 193.
- p. 16 'a good-sized house, and comfortable enough in a steady, ugly, respectable way': Oliphant, *The Curate in Charge*, p. 3.

- p. 16 In 1851, when our story opens, there were 17,621 Anglican clergy: Chadwick, *The Victorian Church*, p. 244.
- p. 16 a country rector, with only 250 or so souls in his care, enjoyed an average income of £500: Cannadine, *The Decline and Fall of the British Aristocracy*, p. 260.
- p. 16 Jane Austen grew up in what she considered to be an embarrassingly deficient rectory at Steventon in Hampshire, but it had a drawing room, kitchen, parlour, study and library, and seven bedrooms – scarcely a hardship posting: Halperin, *The Life of Jane Austen*, pp. 14–15.
- p. 16 The richest living of all was at Doddington in Cambridgeshire, which had 38,000 acres of land and produced an annual income of £7,300: Bax, *The English Parsonage*, p. 197.
- p. 17 Tithes were a chronic source of tension between Church and farmer, and in 1836, the year before Queen Victoria ascended the throne, it was decided to simplify matters: The complex history of tithes is discussed in Savidge, *The Parsonage in England*, pp. 9–11, and Bax, *The English Parsonage*, pp. 132–3 and 196–8. I am also indebted to the Very Reverend Michael Sadgrove, Dean of Durham Cathedral, for additional explication.
- p. 17 Ordination in the Church of England required a university degree, but most ministers read classics and didn't study divinity at all: Strong, *A Little History of the English Country Church*, p. 180.
- p. 18 George Bayldon, a vicar in a remote corner of Yorkshire, had such poor attendances at his services that he converted half his church into a henhouse: Details of the stupefyingly varied interests of nineteenth-century English clergymen come variously from Chadwick, *The Victorian Church*; Briggs, *Victorian People*; Strong, *A Little History of the English Country Church*; and the *Oxford Dictionary of National Biography*.
- p. 18 by the time of the Great Exhibition, over 250,000 of his looms were in use in England alone: Hobsbawm, *Industry and Empire*, p. 64.
- .
- p. 18 Adam Buddle, a botanist vicar in Essex, was the eponymous inspiration for the flowering buddleia: *Economist*, 'A Lovesome Thing', 20 December 2003.
- p. 19 less happily, he appears to have been responsible for the spread of many injurious diseases: Ordish, *The Great Wine Blight*, pp. 16–18.
- p. 19 He devised the mathematical equation that has come to be known as the Bayes theorem: *Current Archaeology*, 'The New Radiocarbon Dating Revolution', May/June 2007, and *British Archaeology*, 'Getting Sophisticated with Dating', May/June 2005.
- .
- p. 21 His closest link to fame was that his great-grandfather, Robert Marsham, was the inventor of phenology, the science (if it is not too much to call it that) of

keeping track of seasonal changes: *Norwich Evening News*, 'The Man Who Invented Spring Watch', 30 March, 2008.

- p. 21 Even as president he found time to note the first and last appearances of thirty-seven types of fruit and vegetable in Washington markets, and had his agent at Monticello make similar observations there to see if the dates betrayed any significant differences between the two places: McLaughlin, *Jefferson and Monticello*, p. 22.
- p. 22 Fittingly, the final entry of his diary recorded a meal: It was dated 17 October 1802, and read: 'Very weak this morning, scarce able to put on my Cloathes. Dinner today Rost Beef, &c.': Woodforde, *The Diary of a Country Parson*, p. 412.
- p. 23 More than half the people of England and Wales had not gone to church at all, and only 20 per cent had gone to an Anglican service: Briggs, *Victorian People*, pp. 30–36, and Picard, *Victorian London*, p. 343.
- p. 23 The census records show that 79 worshippers attended his morning service that Sunday and 86 came in the afternoon: Ede and Virgoe, *Religious Worship in Norfolk*.
- p. 23 In the same month that the Church of England conducted its attendance survey, Britain also had its ten-yearly national census, which put the national population at a confidently precise 20,959,477: Howarth, *The Year Is 1851*, p. 193.
- p. 23 produced half the world's coal and iron: Hobsbawm, *Industry and Empire*, p. 69, and Hyam, *Britain's Imperial Century*, p. 22.
- p. 23 controlled nearly two-thirds of its shipping, and engaged in one-third of all trade: Arnstein, *Britain Yesterday and Today*, p. 53.
- p. 23 Virtually all the finished cotton in the world was produced in British mills on machines invented and built in Britain: Yafa, *Cotton*, p. 86.
- p. 23 London's banks had more money on deposit than all the other financial centres of the world combined: Sinclair, *The Pound*, p. 234. Just to give some sense of scale, Paris banks in 1850 had total deposits of £13 million; London's banks had £120 million.
- p. 24 Karl Marx, living in London, noted in a tone of wonder, and just a hint of helpless admiration, that it was possible to buy five hundred kinds of hammer in Britain: Petroski, *The Evolution of Useful Things*, p.156.
- p. 24 Almost 100,000 objects were on display, spread among some 14,000 exhibits: Beauchamp, *Exhibiting Electricity*, p. 78.
- p. 25 *The Times* calculated that it would take two hundred hours to see it all: Leapman, *The World for a Shilling*, p. 133.

- p. 25 Fortunately, the American philanthropist George Peabody, living in London, stepped in and provided \$15,000 in emergency funding: Weightman, *The Industrial Revolutionaries*, p. 223.
- p. 25 The Koh-i-Noor had become one of the Crown Jewels two years earlier, after being liberated (or looted, depending on your perspective) by the British army during its conquest of the Punjab in India: Leapman, *The World for a Shilling*, p. 170.
- pp. 25–6 Cyrus McCormick displayed a reaper that could do the work of forty men – a claim so improbably bold that almost no one believed it until the reaper was taken out to a farm in the Home Counties and shown to do all that it promised it could: Gordon, *An Empire of Wealth*, p. 175–6.
- p. 26 Most exciting of all was Samuel Colt's repeat-action revolver: Beauchamp, *Exhibiting Electricity*, p. 78.
- p. 26 The most popular feature at the Great Exhibition was not an exhibition at all, but rather the elegant 'retiring rooms', where visitors could relieve themselves in comfort, an offer taken up with gratitude and enthusiasm by 827,000 people: Halliday, *The Great Stink of London*, p. 43.
- p. 26 'the Great Unwashed': The term was actually coined by the English novelist Edward Bulwer-Lytton in his 1830 novel *Paul Clifford* – a work now better remembered for its excruciating opening line: 'It was a dark and stormy night.' The line in *Pendennis* is: 'Gentlemen, there can be but little doubt that your ancestors were the Great Unwashed.'
- pp. 26–7 Chartism was a popular movement named for the People's Charter of 1837, which sought a range of political reforms – all fairly modest in retrospect: Specifically, the charter sought universal suffrage for men, reform of political constituencies, annual elections, the introduction of secret balloting, payment for members of Parliament, and the abolition of property qualifications for MPs. The movement is succinctly described in *The Making of the English Working Class* by E. P. Thompson, pp. 209–10.
- p. 27 Cannons were placed outside the Bank of England: Rapport, *1848: Year of Revolution*, p. 95.
- p. 27 One hundred and seventy thousand special constables – mostly rich men and their servants – stood by, under the command of the doddering Duke of Wellington: Longford, *Wellington*, p. 121.
- p. 27 Rotten boroughs were those where a member of Parliament could be elected by a small number of people: Carter, *The Government of the United Kingdom*, pp. 34–5.
- p. 28 In the event, the rally fizzled out, partly because the Chartists' leader, Feargus O'Connor, was beginning to behave bizarrely from an as-yet-undiagnosed case of syphilitic dementia: Wheen, *Karl Marx*, p. 196, and Postgate, *Story of a Year*, pp. 123–4.

- p. 28 the 'London mob, though neither heroic, nor poetical, nor patriotic, nor enlightened, nor clean, is a comparatively good-natured body': Quoted in Rapport, *1848: Year of Revolution*, p. 95.
- p. 28 Henry Mayhew, in his influential *London Labour and the London Poor*, published that year, noted that working people 'almost to a man' were 'red-hot proletarians, entertaining violent opinions': Wheen, *Karl Marx*, p. 196.
- p. 28 a 'beautiful and imposing and touching spectacle', in the words of a radiant Queen Victoria: Flanders, *Consuming Passions*, p. 280.
- p. 28 A woman named Mary Callinack, aged eighty-five, walked more than 250 miles from Cornwall: Howarth, *The Year Is 1851*, p. 227.
- p. 28 William Morris, the future designer and aesthete, then aged seventeen, was so appalled by what he saw as the exhibition's lack of taste and veneration of excess that he staggered from the building and was sick in the bushes: Picard, *Victorian London*, p. 167.
- p. 28 During the whole of the Great Exhibition just twenty-five people were charged with offences – fifteen for picking pockets and ten for petty larceny: Howarth, *The Year Is 1851*, p. 228.
- p. 29 The Great Exhibition cleared a profit of £186,000, enough to buy thirty acres of land south of Hyde Park: Picard, *Victorian London*, p. 275.
- p. 29 Some 6,400 workers were needed to put the new building up and it took them more than two years to do so: Picard, *Victorian London*, pp. 277–80.
- p. 29 Ten years after the Great Exhibition, Prince Albert died, and the great Gothic spaceship known as the Albert Memorial was built just west of where the Crystal Palace had stood: Curl, *The Victorian Celebration of Death*, pp. 239–42.
- p. 29 at a whopping cost of £120,000, or about half as much again as the Crystal Palace itself: *New Yorker*, 'The Long Green Puddle', 25 August 1962.
- p. 29 On his lap he holds a book: the catalogue of the Great Exhibition: *New Yorker*, 'The Great Iron Ship', 19 September 1953.
- p. 30 In six years, one hundred thousand farmers and farm workers left the land: Bax, *The English Parsonage*, p. 194.
- p. 30 By the end of the century the average English clergyman's income was less than half what it had been fifty years before: Cannadine, *The Decline and Fall of the British Aristocracy*, pp. 260–61.

Chapter 2: The Setting <heading>

- p. 32 Altogether more than two hundred people lost their lives in waters around the British Isles that night: The details of the winter storm of 1850, including the breaking up of the barque *Edmund*, were vividly recorded in successive issues of the *Illustrated London News*, on 30 November and 7 December.
- p. 32 In London at the half-built Crystal Palace, rising in Hyde Park, newly installed glass panes lifted and banged, but stayed in place, and the building itself withstood the battering winds with barely a groan: Picard, *Victorian London*, pp. 262–5.
- p. 33 Thanks to its completeness and preservation, Skara Brae offers a scene of intimate, almost eerie domesticity: The story of Skara Brae's discovery and importance is surveyed briskly but authoritatively in *British Archaeology*, 'Great Sites: Skara Brae', October 2000. Other details, particularly regarding excavations, are taken from Ritchie, *Prehistoric Orkney*; Ritchie and Ritchie, *Scotland: Archaeology and Early History*; Renfrew, *The Prehistory of Orkney*; and from interviews I conducted during trips to Orkney for an article in *National Geographic* ('Orkney: Ancient North Sea Haven') published in June 1998. Details from other sources are given individually below.
- p. 33 including a codfish that weighed seventy-five pounds: Pollard, *Seven Ages of Britain*, p. 19.
- p. 33 The number of people in the whole of the British Isles fifteen thousand years ago may have been as little as two thousand: Simmons, *An Environmental History of Great Britain from 10,000 Years Ago to the Present*, p.15.
- p. 34 from all the evidence it appears that Skara Brae enjoyed six hundred years of uninterrupted comfort and tranquillity: Miles, *The Tribes of Britain*, p. 71.
- p. 35 His name was Vere Gordon Childe: Most of the facts of Childe's work and character come from Green, *Prehistorian: A Biography of Vere Gordon Childe*; Trigger, *Gordon Childe: Revolutions in Archaeology*; and from lengthy obituaries in *American Anthropologist*, vol. 60, no. 4 (1958) and *American Antiquity*, vol. 24, no. 1 (1958). Some of the specific details are itemized below.
- p. 35 He had read classics and philology at the University of Sydney, where he had also developed a deep and abiding attachment to Communism: *American Antiquity*, 'Vere Gordon Childe, 1892–1957', vol. 24, no. 1 (1958).
- p. 35 In 1927, the University of Edinburgh appointed him to the brand-new post of Abercrombie Professor of Prehistoric Archaeology: Ritchie, *Prehistoric Orkney*, p. 12.

- p. 35 Nearly every written description of Childe dwells almost lovingly on his oddness of manner and peculiar looks: Sweetman, *The Antiquaries*, pp. 25–6.
- p. 35 His colleague Max Mallowan (now best remembered, when remembered at all, as the second husband of Agatha Christie) said he had a face ‘so ugly that it was painful to look at: Balter, *The Goddess and the Bull*, p. 10.
- p. 37 A colleague, Stuart Piggott, noted almost with awe Childe’s ‘inability to appreciate the nature of archaeological evidence in the field’: Green, *Prehistorian: A Biography of Vere Gordon Childe*, p. 65.
- p. 37 Nearly all his many books were based on reading rather than personal experience: Barker, *The Agricultural Revolution in Prehistory*, p. 234.
- p. 37 In Norway, hoping to impress colleagues, he once tried to order a dish of raspberries and was brought twelve beers: Green, *Prehistorian: A Biography of Vere Gordon Childe*, p. 76.
- p. 37 Above all he was an original thinker, and at just the time that he was excavating at Skara Brae he had what was perhaps the single biggest and most original idea of twentieth-century archaeology: Barker, *The Agricultural Revolution in Prehistory*, pp. 10–12.
- pp. 37–8 The human past is traditionally divided into three very unequal epochs – the Palaeolithic (or ‘old stone age’), which ran from 2.5 million years ago to about 10,000 years ago; the Mesolithic (‘middle stone age’), covering the period of transition from hunter-gathering lifestyles to the widespread emergence of agriculture, from 10,000 to 6,000 years ago; and the Neolithic (‘new stone age’) which covers the closing, but extremely productive, two thousand years or so of prehistory, up to the Bronze Age: I am indebted to Professor Mark White of Durham University for clarifying these periods for me.
- p. 38 This period is known to scientists as the Younger Dryas: Balter, *The Goddess and the Bull*, p. 185.
- p. 38 Farming was independently invented at least seven times: Barker, *The Agricultural Revolution in Prehistory*, p. 24.
- p. 38 Cities likewise emerged in six places: Reader, *Cities*, p. 10.
- pp. 38–9 ‘When Cortés landed in Mexico he found roads, canals, cities, palaces, schools, law courts, markets, irrigation works, kings, priests, temples, peasants, artisans, armies, astronomers, merchants, sports, theatre, art, music, and books’: Wright, *A Short History of Progress*, p. 51.
- p. 39 Dogs, for instance, were domesticated at much the same time in places as far apart as England, Siberia and North America: Simmons, *Global Environmental History*, p. 29.

- p. 39 Agriculture started 11,500 years ago in the Levant, but 8,000 years ago in China and only a little over 5,000 years ago in most of the Americas: Simmons, *Global Environmental History*, p. 55.
- p. 39 The march of progress, in short, has been anything but predictable and rhythmic: Mann, *1491*, p. 22.
- pp. 39–40 a Cambridge University archaeologist named Dorothy Garrod, working in Palestine at a place called Shuqba, discovered an ancient culture that she dubbed the Natufian: Barker, *The Agricultural Revolution in Prehistory*, pp. 116–18, and Balter, *The Goddess and the Bull*, pp. 168–80.
- p. 40 The Natufians built the first villages and founded Jericho, which became the world's first true city: *Evolutionary Anthropology*, 'The Natufian Culture in the Levant, Threshold to the Origins of Culture', December 1988.
- p. 40 at least thirty-eight theories have been put forward to explain why people took to living in communities: *New Yorker*, 'Food Processor', 19 August 2002.
- p. 40 One theory, evidently seriously suggested . . . was that 'fortuitous showers' of cosmic rays caused mutations in grasses that made them suddenly attractive as a food source: Jacobs, *The Economy of Cities*, p. 42.
- p. 40 Wheat is useless as a food until made into something much more complex and ambitious like bread, and that takes a great deal of effort: Petersen, *Bread and the British Economy, circa 1770–1870*, pp. 44–5, and Fernández-Armesto, *Food: A History*, pp. 110–11.
- p. 41 A typical hunter-gatherer enjoyed a more varied diet and consumed more protein and calories than settled people, and took in five times as much vitamin C as the average person today: Fernández-Armesto, *Food: A History*, p. 71.
- p. 41 'Rice inhibits the activity of Vitamin A; wheat has a chemical that impedes the action of zinc and can lead to stunted growth; maize is deficient in essential amino acids and contains phytates, which prevent the absorption of iron': *New Yorker*, 'Edible Complex', 27 November 2000.
- p. 41 Even on Orkney, where prehistoric life was probably as good as it could get, an analysis of 340 ancient skeletons showed that hardly any people lived beyond their twenties: Renfrew, *The Prehistory of Orkney*, p. 39.
- p. 41 People living together are vastly more likely to spread illness from household to household: *Economist*, 'Noble or Savage', 22 December 2007.
- p. 41 As far as we can tell, virtually all of the infectious diseases have become endemic only since people took to living together: Reader, *Cities*, p. 217.
- p. 41 So sedentism meant poorer diets, more illness, lots of toothache and gum disease: Barker, *The Agricultural Revolution in Prehistory*, p. 171.

- pp. 41–2 Out of the thirty thousand types of edible plant thought to exist on earth, just eleven – corn, rice, wheat, potatoes, cassava, sorghum, millet, beans, barley, rye and oats – account for 93 per cent of all that humans eat: *New Yorker*, 'The Golden Thread', 18 June 1984.
- p. 43 But nothing in the wild remotely resembles modern corn: *New Yorker*, 'The Golden Thread', 18 June 1984.
- p. 43 Hoping to settle the matter once and for all, in 1969 food scientists from all over the world convened at 'An Origin of Corn Conference' at the University of Illinois: *New Yorker*, 'The Golden Thread', 18 June 1984.
- p. 43 Scientists are now pretty sure, however, that corn was first domesticated on the plains of western Mexico: Barker, *The Agricultural Revolution in Prehistory*, p. 272.
- p. 44 Today corn is far more indispensable than most people realize. Cornstarch is used in the manufacture of fizzy drinks, chewing gum, ice cream, peanut butter, ketchup, automobile paint, embalming fluid, gunpowder, insecticides, deodorants, soap, potato crisps, surgical dressings, nail polish, foot powder, salad dressing and several hundred things more: *New Yorker*, 'The Golden Thread', 18 June 1984.
- p. 44 To borrow from Michael Pollan, it is not so much as if we have domesticated corn as it has domesticated us: Pollan, *The Omnivore's Dilemma*, p. 19.
- p. 44 The worry is that as crops are engineered to a state of uniform genetic perfection they will lose their protective variability. When you drive past a field of corn today, every stalk in it is identical to every other – not just extremely similar, but eerily, molecularly identical: Pollan, *The Omnivore's Dilemma*, p. 37.
- p. 44 In 1970, the corn world suffered a real fright when a disease called southern corn-leaf blight started killing corn all over America and it was realized that practically the entire national crop was planted from seeds with genetically identical cytoplasm: *New Yorker*, 'The Golden Thread', 18 June 1984.
- p. 44 in their wild state they are full of poisonous glycoalkaloids: Reader, *Propitious Esculent*, p. 34.
- p. 45 and about a hundred other plants we would be desolate to be without now: Barker, *The Agricultural Revolution in Prehistory*, pp. 233–4.
- p. 45 One day towards the end of that year, a young British archaeologist named James Mellaart was driving through an empty corner of central Anatolia with two colleagues when he noticed an unnatural-looking earthen mound – a 'thistle-covered hump' – stretching across the arid plain: Jacobs, *The Economy of Cities*, p. 32.
- p. 45 Çatalhöyük (the name means 'forked mound') was nine thousand years old: Hodder, *The Leopard's Tale*, pp. 7–13.

- p. 46 other communities – Jericho in Palestine, Mallaha in Israel, Abu Hureyra in Syria – are now known to be considerably older: Fagan, *The Long Summer*, p. 86, and Hodder, *The Leopard's Tale*, pp. 15–16.
- p. 46 Shortly before its discovery, he made his first visit home to Australia in thirty-five years: The story of Childe's return to Australia and death in the Blue Mountains is recounted in Green, *Prehistorian: A Biography of Vere Gordon Childe*, pp.151–4.
- p. 46 Those in the middle of the mass could only be reached by clambering over the roofs of many other houses: Reader, *Cities*, pp. 17–19.
- p. 46 There were no squares or marketplaces, no municipal or administrative buildings – no signs of social organization at all: Hodder, *The Leopard's Tale*, p. 95.
- pp. 46–7 For miles around was nothing but space, and yet the people packed themselves densely together as if pressed by incoming tides on all sides: Hodder, *The Leopard's Tale*, pp. 75–8, and *The Times Higher Educational Supplement*, 'Time to Fetch the Severed Head', 18 August 2006.
- p. 47 The people farmed – but on farms that were at least seven miles away: Balter, *The Goddess and the Bull*, p. 318.
- p. 47 The inhabitants practised art of a high order and not only had fabrics, but a variety of stylish weaves: Barber, *Prehistoric Textiles*, pp. 127–33.

Chapter 3: The Hall <heading>

- p. 48 By one estimate, perhaps as few as ten thousand outsiders moved into Britain in the century after the Romans left: Miles, *The Tribes of Britain*, p. 176.
- p. 49 This was a period of *Völkerwanderung*, 'the wandering of peoples', when groups all across the ancient world – Huns, Vandals, Goths, Visigoths, Ostrogoths, Magyars, Franks, Angles, Saxons, Danes, Alamanni and more – developed a strange, seemingly unquenchable restlessness: Campbell, John and Wormald, *The Anglo-Saxons*, pp. 20–21.
- p. 49 But a problem pointed out by the historian F. M. Stenton is that Jutland got its name long after any Jutes had departed: Stenton, *Anglo-Saxon England*, pp. 11–14.
- p. 50 Bede's reference is in fact the only mention of Jutes anywhere, and he never cites them again. Some scholars think that the reference is an interlineation

added by a later hand anyway and has nothing to do with Bede at all: Campbell, John and Wormald, *The Anglo-Saxons*, p. 29.

- p. 50 The best Stenton can say for them is that they were ‘the least obscure’ of the three: Stenton, *Anglo-Saxon England*, p. 11.
- p. 50 We may know nothing of their beliefs, but we still pay homage to three of their gods – Tiw, Woden and Thor – in the names of our three middle weekdays, and eternally commemorate Woden’s wife, Frig, every Friday: Baugh and Cable, *A History of the English Language*, pp. 55–6.
- p. 51 In Britain, however, the Romans left barely five words and the Celts no more than twenty, mostly geographical terms to describe features specific to the British landscape: Baugh and Cable, *A History of the English Language*, p. 74.
- p. 51 There are various accounts of battles – one at Crecgan Ford (a place of uncertain location) was said to have left four thousand Britons dead – and legend has of course left us tales of the valiant resistance of King Arthur and his men, but legend is all there is: Stenton, *Anglo-Saxon England*, p. 16.
- p. 51 Nothing in the archaeological record indicates wholesale slaughter or populations fleeing as if before a storm: Laing, *The Archaeology of Late Celtic Britain and Ireland*, p. 17.
- p. 52 Even what we can know, from archaeology, is often hard to fathom: See Reynolds, *Later Anglo-Saxon England*, p. 39, and Rivers *et al*, *The Name of the Room*, p. 50.
- p. 52 For three hundred years, London stood mostly empty: Inwood, *A History of London*, p. 40.
- p. 52 On the continent the Germanic peoples had commonly lived in longhouses – the ‘classic’ peasant dwelling in which humans live at one end and livestock at the other – but the incomers abandoned those too for the next six hundred years: Grenville, *Medieval Housing*, pp. 134–6.
- p. 52 The first *grubenhäuser* wasn’t found until 1921 . . . The discoverer was Edward Thurlow Leeds of the Ashmolean Museum in Oxford: These and other facts concerning *grubenhäuser* come principally from Jess Tipper’s definitive 2004 work, *The Grubenhäuser in Anglo-Saxon England*, p. 15. Additional details on the Sutton Courtenay site can be found at the Ashmolean Museum website: [ashmolean.org/ash/amps/leeds/AS Oxfordshire/Sutton Courtenay](http://ashmolean.org/ash/amps/leeds/AS%20Oxfordshire/Sutton%20Courtenay)
- p. 53 Practically all living, awake or asleep, was done in this single large, mostly bare, always smoky chamber: Mercer, *Furniture 700–1700*, pp. 19–20.
- p. 53 ‘a custom which conduced neither to comfort nor the observance of the proprieties’: Gotch, *The Growth of the English House*, p. 11.

- pp. 53–4 Every member of the household, including servants, retainers, dowager widows and anyone else with a continuing attachment, was considered family: Girouard, *Life in the English Country House*, p. 10.
- p. 54 Only much later did 'husband' come to signify a marriage partner: In the sense of a householder, *husband* dates from about 1000, according to the *Oxford English Dictionary*. As a marriage partner, the word is not found before 1290.
- p. 54 'Solar' sounds sunny and light, but in fact the name was merely an adaptation of *solive*, the French word for floor joist or beam: Addison, *Farmhouses in the English Landscape*, p. 18.
- p. 54 Often peasants only owned one main item of apparel, a type of loose gown known as a *cotta*: Pipponier and Mane, *Dress in the Middle Ages*, p. 24.
- pp. 54–5 Serfdom was a form of permanent bondage to a particular lord, and often it was offered as a religious declaration: Southern, *The Making of the Middle Ages*, pp. 99–100.
- p. 55 One eleventh-century thegn named Wulfric had seventy-two properties all over England: Reynolds, *Later Anglo-Saxon England*, p. 59.
- p. 55 Royal households could easily have five hundred servants and retainers, and important peers and prelates were unlikely to have less than one hundred: Girouard, *Life in the English Country House*, pp. 14–15, and Mercer, *Furniture 700–1700*, pp. 22–4.
- p. 55 everything was designed to be mobile: Lucie-Smith, *Furniture*, p. 35.
- p. 55 'treated more as equipment than as prized personal possessions': Rybczynski, *Home*, p. 26.
- p. 56 'spittle and vomit and urine of dogs and men': Quoted in Ayres, *Domestic Interiors*, p. 86.
- p. 56 It was common among the French to say of a rich man that he was 'waist deep in straw': Thornton, *Seventeenth-Century Interior Decoration in England, France and Holland*, p. 143.
- p. 56 'The "ground floor" was justly named': Ayres, *Domestic Interiors*, p. 85.
- p. 56 carpets were too precious to be placed underfoot: Thornton, *Seventeenth-Century Interior Decoration in England, France and Holland*, p. 146.
- p. 56 Dining tables were simply boards laid across trestles, and cupboards were just what the name says – plain boards on which cups and other vessels could be arrayed: Lucie-Smith, *Furniture*, p. 36.

- p. 56 Glass vessels were rare and diners were generally expected to share with a neighbour: Dutton, *The English Country House*, p. 22.
- p. 56 The dining table was a plain board called by that name. It was hung on the wall when not in use, and was perched on the diners' knees when food was served: Ayres, *Domestic Interiors*, p. 170.
- p. 57 Until the 1600s chairs were rare . . . and were designed not to be comfortable but to impute authority: Deetz, *In Small Things Forgotten*, p. 121.
- p. 57 Medieval banquets show people eating all kinds of exotic foods that are no longer eaten. Birds especially featured. Eagles, herons, peacocks, sparrows, larks, finches, swans and much else that flew were all widely consumed: Dillon, *The Pilgrims*, p. 13, and Rybczynski, *Home*, p. 31.
- p. 57 Beef, mutton and lamb were hardly eaten at all for a thousand years because the animals they came from were needed for their fleeces or muscle power and thus were much too valuable to kill: Pullar, *Consuming Passions*, p. 95.
- p. 57 For much of the medieval period the largest source of animal protein for most people was smoked herring: Simmons, *An Environmental History of Great Britain from 10,000 Years Ago to the Present*, p. 82.
- p. 57 The total number of days of dietary restriction varied over time, but at its peak nearly half the days of the year were 'lean' days, as they were known: Youngs, *Sixteenth Century England*, p. 188.
- p. 57 The kitchen accounts for the Bishop of Hereford show his household eating herring, cod, haddock, salmon, pike, bream, mackerel, ling, hake, roach, eels, lampreys, stockfish, tench, trout, minnows, gudgeon, gurnet and a few others – more than two dozen types altogether: Pullar, *Consuming Passions*, p. 96.
- p. 57 Until the time of Henry VIII, failing to observe fish days was punishable by death, at least in theory: Kurlansky, *Salt*, p. 110.
- p. 59 We 'make a bed' today because in the Middle Ages that is essentially what you did – you rolled out a cloth sleeping pallet or heaped a pile of straw, found a cloak or blanket and fashioned whatever comfort you could: Wright, *Warm and Snug*, p. 18.
- p. 59 Until well into the seventeenth century, 'bed' meant only the mattress and what it was stuffed with, not the frame and its contents: Bates and Fairbanks, *American Furniture 1620 to the Present*, p. 29.
- p. 59 Household inventories into the Elizabethan period show that people placed great attachment on beds and bedding, with kitchen equipment following behind: Mercer, *Furniture 700–1700*, pp. 24–5
- p. 59 Only then did general household furniture make it on to inventories, and then generally in vague terms like 'a few tables and some benches': Dutton, *The English Country House*, p. 47.

- p. 59 Eleanor Godfrey . . . notes how in 1590 an alderman in Doncaster left his house to his wife but the windows to his son: Godfrey, *The Development of English Glassmaking*, p. 208.
- p. 59 The owners of Alnwick Castle . . . always had their windows taken out and stored when they were away: Clifton-Taylor, *The Pattern of English Building*, p. 392.
- p. 59 Even in the largest houses generally only the windows in the most important rooms had glass in them: Yarwood, *The Architecture of England*, p. 86.
- p. 60 The one thing that is certain is that there wasn't a great deal of comfort in even the best homes: Mercer, *Furniture 700–1700*, pp. 20–21.
- p. 60 The medieval world was a world without reserves and when harvests were poor, as they were about one year in four on average, hunger was immediate: Coward, *The Stuart Age*, p. 5.
- p. 60 we know more about how ancient Greeks and Romans sat or reclined than we do about the English of eight hundred years ago: Lucie-Smith, *Furniture*, p. 29.
- p. 61 In the whole of Britain, as far as can be told, just one door survives from the Anglo-Saxon period: *The Times*, 'History of Oldest Door Is Unlocked', 5 August 2005, and *British Archaeology*, 'Ancestral Myth', September/October 2005.
- p. 61 The answer lies in dendrochronology – the scientific counting of tree rings: *British Archaeology*, 'Getting Sophisticated with Dating', May/June 2005, and Grenville, *Medieval Housing*, pp. 9–11.
- p. 62 Jane Grenville in her scholarly and definitive work *Medieval Housing* provides an arresting pair of illustrations showing how two archaeological teams, using the same information, envisioned the appearance of a longhouse at Wharram Percy: Grenville, *Medieval Housing*, p.128.
- p. 62 Grenville quotes one scholar who felt confident enough to assert that the houses of common people were 'of uniformly poor quality throughout the whole of England' right up to the time of the Tudors: Grenville, *Medieval Housing*, p. 126.
- p. 62 People in the distant past were not in fact all that small: *British Archaeology*, 'Ancestral Myth', September/October 2005.
- p. 63 cottages were evolving into a multiplicity of types – 'full Wealden', 'half Wealden', 'double pile' . . . and so on: Brunskill, *Traditional Buildings of Britain*, pp. 40–57.
- p. 63 Fireplaces already existed – they had been brought to England by the Normans – but they weren't impressive: Kelly, *The Book of English Fireplaces*, pp. 12–13.

- p. 64 Because coal smoke was acrid and poisonous, it needed to be contained within a fireplace, or chimneypiece: Quiney, *Town Houses of Medieval Britain*, p. 110.
- p. 64 Many people missed the drifting smoke and were convinced they had been healthier when kept 'well kippered in wood smoke', as one observer put it: Kelly, *The Book of English Fireplaces*, p. 16.
- p. 64 As late as 1577 a William Harrison insisted that in the days of open fires 'our heads did never ake': Quiney, *Town Houses of Medieval Britain*, p. 110.
- p. 64 Smoke in the roof space discouraged nesting birds and was believed to strengthen timbers: Brimblecombe, *The Big Smoke*, p. 35.
- p. 65 The first step, generally, was to build a grand new room upstairs called the great chamber: Girouard, *Life in the English Country House*, pp. 52–4.
- p. 65 'How widely different is all this from the ancient custom of the whole household living by day and night in the great hall!' wrote Gotch in a moment of rare exuberance: Gotch, *The Growth of the English House*, p. 108.
- p. 65 One new type not mentioned by Gotch was *boudoir*, literally 'a room to sulk in': *Journal of the Society of Architectural Historians*, 'The Name of the Boudoir', June 1994, and Girouard, *Life in the French Country House*, p. 153.
- p. 66 People moved around the house looking for shade or sunlight and often took their furniture with them, so rooms, when they were labelled at all, were generally marked '*mattina*' (for morning use) or '*sera*' (for afternoon): Rybczynski, *The Perfect House*, p. 213.
- p. 66 'Closet,' Mark Girouard tells us, had 'a long and honourable history before descending to final ignominy as a large cupboard or a room for the housemaid's sink and mops': Girouard, *Life in the English Country House*, pp. 56–7.
- p. 66 In English the cabinet became the most exclusive and private of all chambers: Girouard, *Life in the English Country House*, pp. 56–7.
- p. 67 Often this private room had a small cell or alcove off it, generally known as the privy, but also called a jakes, latrine, draughts, place of easement, necessarium, garderobe, house of office or gong, among other names: Girouard, *Life in the English Country House*, p. 56.
- p. 67 It is true, however, that the person in charge of the royal privy was known as the groom of the stool: Hart-Davis, *What the Tudors and Stuarts Did for Us*, pp. 106–7.

- p. 67 The most enormous of all was Knoles in Kent, which grew and grew until it covered nearly four acres: Jackson-Stops, *The Country House in Perspective*, pp. 20–24.
- p. 67 A striking example is Hardwick Hall in Derbyshire: Girouard, *Life in the English Country House*, p. 120, and Wilkinson, *The Shock of the New*, p. 94.
- p. 68 The great long gallery was 166 feet long but contained only three tables, a few straight-backed chairs and benches, and two mirrors (which in Elizabethan England were exceedingly precious treasures, more valuable than any paintings): Jackson-Stops, *The Country House in Perspective*, pp. 44–8.
- p. 68 so she resurrected in a big way the venerable practice of making annual royal progresses: *History Today*, 'The Royal Court and Progresses', May 2003.
- p. 69 one of those left behind remarked in an understandably appalled tone how the royal visitors had left 'their excrements in every corner, in chimneys, studies, coal-houses, cellars': Picard, *Restoration London*, p. 15.
- p. 69 A hapless courtier named Sir John Puckering gave Elizabeth a silk fan festooned with diamonds, several loose jewels, a gown of rare splendour and a pair of exceptionally fine virginals, then watched at their first dinner as Her Majesty admired the silver cutlery and a salt cellar and, without a word, dropped them into the royal handbag. *History Today*, 'The Royal Court and Progresses', May 2003.
- pp. 69–70 James I ordered the loyal but inconsequential Sir Francis Fane to rebuild Apethorpe Hall in Northamptonshire on a colossal scale: *Guardian*, 'Restoration Opens Doors on a Royal Scandal after 400 Years', 4 August 2007.
- p. 70 For sixteen years he was required to act as jailer to Mary, Queen of Scots, which in effect meant maintaining the court of a small, fantastically disloyal state in his own home: Hibbert, *Elizabeth I*, p. 204

Chapter 4: The Kitchen <heading>

- p. 72 In the summer of 1662, Samuel Pepys, then a rising young figure in the British Navy Office, invited his boss, Naval Commissioner Peter Pett, to dinner at his home on Seething Lane, near the Tower of London: Picard, *Restoration London*, p. 153.
- p. 72 Sugar and other expensive ingredients were often stretched with gypsum, plaster of Paris, sand, dust and other forms of 'daft': Macinniss, *The Killer Beans of Calabar*, p. 51.

- p. 72 Butter reportedly was bulked out with tallow and lard: Cockayne, *Hubbub*, p. 100.
- pp. 72–3 A tea drinker, according to various authorities, might unwittingly take in anything from sawdust to powdered sheep's dung: See, for instance, Standage, *A History of the World in Six Glasses*, p. 124, and Cummings, *The American and His Food*, p. 35.
- p. 73 One closely inspected shipment, Judith Flanders reports, proved to be only slightly more than half tea; the rest was made up of sand and dirt: Flanders, *The Victorian House*, p. 89.
- p. 73 How many unsuspecting ladies of quality, he wondered, had enjoyed a plate of luscious cherries that had been 'rolled and moistened between the filthy and, perhaps, ulcerated chops of a St Giles's huckster?': Cockayne, *Hubbub*, p. 232.
- p. 73 Smollett characterized London bread as a poisonous compound of 'chalk, alum and bone-ashes, insipid to the taste and destructive to the constitution': Smollett, *The Expedition of Humphry Clinker*, p. 119.
- p. 73 The earliest formal allegation of widespread bread adulteration yet found came in a book called *Poison Detected: Or Frightful Truths* written anonymously in 1757: Filby, *A History of Food Adulteration and Analysis*, pp. 80–85.
- p. 73 Even now these assertions are routinely reported as fact: For example, *Life and Death in Spitalfields*, a scholarly work published by the Council for British Archaeology, states, 'Adulterants included . . . alum and crushed animal bone in bread', p. 56.
- p. 74 Filby took the interesting and obvious step of baking loaves of bread using the accused adulterants in the manner and proportions described: Filby, *A History of Food Adulteration and Analysis*, pp. 99–101.
- p. 74 Up to 80 per cent of all household expenditure . . . was spent on food, and up to 80 per cent of that went on bread: Petersen, *Bread and the British Economy, circa 1770–1870*, pp. 4–5.
- p. 74 Even middle-class people spent as much as two-thirds of their income on food (compared with about one-quarter today), of which a fairly high and sensitive portion was bread: Petersen, *Bread and the British Economy, circa 1770–1870*, p. 4.
- p. 74 Because bread was so important, the laws governing its purity were strict and the punishments severe: Petersen, *Bread and the British Economy, circa 1770–1870*, p. 117.
- p. 75 Just three or four spoonfuls can whiten a 280-pound sack of flour, and such a dilute amount would harm no one: Filby, *A History of Food Adulteration and Analysis*, pp. 102–3.

- p. 75 It actually made inferior grades of flour – flour that was perfectly good nutritionally but just not very attractive – acceptable to the masses: Petersen, *Bread and the British Economy, circa 1770–1870*, p. 120.
- p. 75 A parliamentary investigation of bakeries in 1862 found many of them filled 'with masses of cobwebs, weighed down with flour dust that had accumulated upon them, and hanging in strips' ready to drop into any passing pot or tray: Flanders, *The Victorian House*, p. 89.
- p. 75 In the same period, a London confectioner was fined 'for colouring his sweets yellow with surplus pigment left over from painting his cart': Pullar, *Consuming Passions*, p. 205.
- p. 76 Smollett describes how milk was carried through the streets of London in open pails, into which plopped 'spittle, snot and tobacco-quids from foot passengers, over-flowings from mud-carts, splatterings from coach-wheels, dirt and trash chucked into it by roguish boys for the joke's-sake, the spewings of infants . . . and, finally, the vermin that drops from the rags of the nasty drab that vends this precious mixture': Smollett, *The Expedition of Humphry Clinker*, p. 121.
- p. 76 One witness to a parliamentary investigation of 1828 said he saw 'a cow's carcass that was so rancid, the fat was no more than dripping yellow slime': Wise, *The Italian Boy*, p. 128.
- p. 76 Smithfield sold so much bad meat that it had a private name for it: *cag-mag*, which was an abbreviation of two slang words meaning literally 'cheap crap': Wise, *The Italian Boy*, pp. 127–35.
- pp. 76–7 Argentinians raised massive herds of cattle on their endless and accommodating pampas, but had no way to ship the meat, so most of their cows were boiled down for their bones and tallow and the meat was simply wasted: Russell, *A History of Agricultural Science in Great Britain*, p. 91.
- p. 77 In the late eighteenth century a Frenchman named François Appert (or possibly Nicolas Appert – sources vary confusingly) produced a book called *The Art of Preserving All Kinds of Animal and Vegetable Substances for Several Years*, which represented a real breakthrough: 'Historic Preservation', *American Heritage's Invention & Technology*, Spring 1993, and Hardyment, *From Mangle to Microwave*, pp. 145–7.
- p. 77 In the summer of 1844, the Wenham Lake Ice Company – named for a lake in Massachusetts – took premises in the Strand in London, and there each day placed a fresh block of ice in the window: Weightman, *The Frozen-Water Trade*, p. 182.
- p. 78 In fact, Wenham ice melted at the same speed as any other ice: Weightman, *The Frozen-Water Trade*, p. 182.
- p. 78 In order to make the ice industry exist, it was necessary to work out ways to cut and lift ice on a large scale, build storehouses, secure trading rights,

engage a reliable chain of shippers and agents and, above all, create a demand for ice in places where ice had seldom or never been seen: *Boston Globe*, 'Wenham's Ice Age', 22 February 1998.

- p. 78 The notion of shipping ice from New England to distant ports was considered completely mad – 'the vagary of a disordered brain', in the words of one of his contemporaries: *American Heritage*, 'Land of the Free Trade', July/August 1993.
- p. 78 The first shipment of ice to Britain so puzzled customs officials as to how to classify it that all 300 tons of it melted away before it could be moved off the docks: Hardymont, *Home Comfort*, p. 104.
- p. 79 Tudor was a strange and difficult man – 'imperious, vain, contemptuous of competitors and implacable to enemies': Boorstin, *The Americans*, p. 11.
- p. 79 For several decades, ice was America's second biggest crop, measured by weight: Gosnell, *Ice*, p. 368.
- p. 79 It never produced more than about ten thousand tons of ice in a year, compared with almost a million tons lifted annually just from the Kennebec River in Maine: Weightman, *The Frozen-Water Trade*, pp. 192 and 211.
- p. 79 The Norwegians – not a people one normally associates with sharp practices – changed the name of Lake Oppegaard, near Oslo, to Lake Wenham so that they could tap into the lucrative market: Weightman, *The Frozen-Water Trade*, p. 190.
- p. 80 At Delmonico's, the celebrated New York restaurant, customers could order pumpernickel rye ice cream and asparagus ice cream: Gosnell, *Ice*, p. 367.
- p. 80 Brooklyn sucked down 334,000 tons, Boston 380,000, Philadelphia 377,000: Weightman, *The Frozen-Water Trade*, p. 231.
- p. 80 'Whenever you hear America abused,' one American told Sarah Maury, a visiting Briton, 'remember the ice': Weightman, *The Frozen-Water Trade*, p. 179.
- p. 80 Chicago became the epicentre of the railway industry in part because it could generate and keep huge quantities of ice: Sir James Caird, in Mingay, *The Agricultural Revolution*, p. 305.
- p. 80 Individual ice houses in Chicago held up to 250,000 tons of ice: Weightman, *The Frozen-Water Trade*, pp. 220–21.
- p. 80 In 1859 an American named John Landis Mason solved the challenge that the Frenchman François Appert (or Nicolas) had not quite mastered the better part of a century before: 'Historic Preservation', *American Heritage's Invention & Technology*, Spring 1993.

- p. 81 An alternative and ultimately even more successful method for preserving food, namely canning, was perfected in England by a man named Bryan Donkin working between 1810 and 1820: Tannahill, *Food in History*, p. 355, and Hardyment, *From Mangle to Microwave*, pp. 145–7.
- p. 81 Soldiers usually attacked them with bayonets or fired bullets into them: *American Heritage's Invention & Technology*, 'The Can Opener', Summer 2000.
- p. 81 By 1880 machines could pump out fifteen hundred in a day: Cummings, *The American and His Food*, p. 68.
- p. 81 The safe modern manual can opener – the sort with two rolling wheels and a twisting key – dates only from 1925: *American Heritage's Invention & Technology*, 'Form Follows Failure', Fall 1992.
- p. 81 As late as 1930 America had 181,000 refrigerated railway cars and they were all cooled with ice: Bernstein, *A Splendid Exchange*, p. 333.
- p. 82 'British agriculture virtually collapsed in the last generation of the nineteenth century': Fernández-Armesto, *Food: A History*, p. 221.
- p. 84 One suggested menu – for a dinner for six people – comprises 'carrot soup, turbot with shrimp sauce, lobster patties, stewed kidneys, roast saddle of lamb, boiled turkey, knuckle of ham, mashed and brown potatoes, stewed onions, cabinet pudding, blancmange and cream, and macaroni': Howarth, *The Year Is 1851*, pp. 99–100.
- p. 84 Such a meal, it has been calculated, could generate 450 pieces of washing-up: *Economist*, 'Downstairs Upstairs', 22 December 2007.
- p. 84 Until almost the middle of the century instructions in cookery books were always wonderfully imprecise, calling merely for 'some flour' or 'enough milk': Flanders, *The Victorian House*, p. 81.
- p. 85 Mrs Beeton made clear from the first line that running a household was a grave and cheerless business: Unless otherwise cited, the details in this and associated passages are from *The Book of Household Management* (1861).
- p. 85 Despite this bias towards the kitchen, however, Mrs Beeton didn't actually like cooking and didn't go near her own kitchen if she could possibly help it: Hughes, *The Short Life and Long Times of Mrs Beeton*, p. 197.
- p. 85 You don't have to read far into the recipes to begin to suspect as much – when she suggests, for instance, boiling pasta for an hour and three-quarters before serving: Flanders, *The Victorian House*, p. 239.
- p. 86 Mrs Beeton stole shamelessly from the most obvious and traceable sources: Hughes, *The Short Life and Long Times of Mrs Beeton*, pp. 258–61.

- p. 86 Remarkably, Mrs Beeton didn't even trouble to adjust gender, so that one or two of her stories are related in a voice that, disconcertingly and bewilderingly, can only be male: Hughes, *The Short Life and Long Times of Mrs Beeton*, p. 258.
- p. 86 She devotes more space to the making of turtle soup than to breakfast, lunch and supper combined, and never mentions afternoon tea at all: Flanders, *The Victorian House*, p. 226.
- p. 87 She was just twenty-eight years old when she died: Gardiner, *The Edwardian Country House*, p. 50.
- p. 87 Of apples alone there were, almost unbelievably, more than 2,000 varieties to choose from: Uglow, *A Little History of British Gardening*, pp. 15 and 238–9.
- p. 88 So as well as being the author of the Declaration of Independence, he was also the father of the American French fry: Root and de Rochement, *Eating in America*, pp. 63–6.
- p. 88 Lobsters bred in such abundance around Britain's coastline that they were fed to prisoners and orphans or ground up for fertilizer: *Economist*, 'When Lobster Was Fertiliser', 29 October 2005.
- p. 88 New York Harbor alone held half the world's oysters and yielded so much sturgeon that caviar was set out as a bar snack: Kurlansky, *The Big Oyster*, pp. 35 and 259.
- p. 88 One hotel in New York in 1867 had 145 dishes on the menu: Fernández-Armesto, *Food: A History*, p. 124.
- p. 88 The golden age of gluttony was actually the eighteenth century: Porter, *Flesh in the Age of Reason*, pp. 234–5.
- p. 89 Even more famously enormous was the Prince Regent, the future George IV, whose stomach when let out of its corset reportedly spilled to his knees: Pullar, *Consuming Passions*, p. 177.
- p. 89 A breakfast recorded by the Duke of Wellington consisted of 'two pigeons and three beef-steaks, three parts of a bottle of Mozelle, a glass of champagne, two glasses of port and a glass of brandy': This odd fact is recorded, a little unexpectedly, in the *Oxford Dictionary of National Biography's* entry for King George IV.
- p. 89 'With the ravenous orgasm upon you, it seems impertinent to interpose a religious sentiment': Quoted in Pullar, *Consuming Passions*, p. 182.
- p. 89 By the middle of the nineteenth century, gargantuan portions had become institutionalized and routine: Lofts, *Domestic Life in England*, p. 201.

- p. 90 At Tatton Park in Cheshire, to try to speed things up an internal railway line was laid down so that trolleys could be rushed from the kitchen to a distant dumbwaiter: Hardyment, *Home Comfort*, p. 29.
- p. 90 Auguste Escoffier, the great French chef at the Savoy Hotel in London, earned the esteem of British diners not just by producing very good food, but by employing a brigade system in the kitchens: Taylor, *Ritzy*, p. 134.
- p. 90 If *average* consumption is any guide, then people ate quite a lot of healthy food: The figures are from Cox, *Life and Death in Spitalfields*, p. 54.
- p. 91 Henry Mayhew, in his classic *London Labour and the London Poor*, published in the year our rectory was built, suggested that a piece of bread and an onion constituted a typical dinner for a labourer: Picard, *Victorian London*, p. 180.
- p. 91 'the staple diet of the working classes and much of the lower middle classes in the mid nineteenth century consisted of bread or potatoes, a little bit of butter, cheese or bacon, tea with sugar': Flanders, *Consuming Passions*, p. 79.
- p. 91 'They have Water Porridge for Breakfast and Supper . . . and generally Oatcake and Treacle, or Oatcake and poor Broth, for Dinner': Waller, *The Real Oliver Twist*, p. 172.
- p. 91 In Scotland, farm labourers in the early 1800s received an average ration of 17.5 pounds of oatmeal a week, plus a little milk, and almost nothing else: *New Yorker*, 'Fiat Panis', 17 December 1984.
- pp. 91–2 These were widely disdained for the first hundred and fifty years or so after their introduction to Europe: Root and de Rochement, *Eating in America*, pp. 63–6.
- p. 92 Many people considered the potato an unwholesome vegetable because its edible parts grew below ground rather than reaching nobly for the sun: *New Yorker*, 'Man Is What He Eats', 12 November 1984.
- p. 92 A single acre of stony soil could support a family of six if they were prepared to eat a lot of potatoes, and the Irish, of necessity, were: *New Yorker*, 'Man Is What He Eats', 12 November 1984.
- p. 92 By 1780, 90 per cent of people there were dependent for their survival exclusively or almost exclusively on potatoes: Reader, *Propitious Esculent*, p. 130.
- p. 92 Unfortunately, the potato is also one of the most vulnerable of vegetables, susceptible to more than 260 types of blight or infestation: The frailties of the potato and the great tragedy of the Irish famine are well surveyed in the *New Yorker*, 'The Staffs of Life', 12 November 1984. Other facts here, and the

quotation from Robert Peel, are taken from Keneally, *The Great Shame and the Triumph of the Irish in the English-Speaking World*.

- p. 92 The crops looked fine until August and then suddenly they drooped and shrivelled: Carpenter, *The History of Scurvy and Vitamin C*, pp. 98–101.
- p. 92 In the worst year of the potato famine, London's fish market, Billingsgate, sold 500 million oysters: Kurlansky, *The Big Oyster*, p. 226.
- p. 93 It was the greatest loss of life anywhere in Europe since the Black Death: Hobsbawm, *History and Empire*, p. 93.

Chapter 5: The Scullery and Larder <heading>

- p. 94 At Barham Rectory in Kent, built at about the same time, the architect gave the servants not only a kitchen, larder and scullery, but also a pantry, storeroom, coal store, miscellaneous cupboards and, crucially, housekeeper's room, which was clearly meant for retreat and relaxation: Brittain-Catlin, *The English Parsonage in the Early Nineteenth Century*, p. 232.
- p. 95 the house that Tull designed for him contained a number of arresting peculiarities: If Tull achieved any distinction as an architect in later life, he seems to have kept very quiet about it. He was not a member of the Royal Institute of British Architects and is not listed in the *Directory of British Architects, 1834–1900*.
- p. 96 Guests at dinner parties might find that they had been seated according to the number of servants they kept: Hardyment, *From Mangle to Microwave*, p. 34.
- p. 96 Frances Trollope, mother of the novelist Anthony Trollope, kept a liveried footman: Trollope, *Domestic Manners of the Americans*, p. xvi.
- p. 96 Karl Marx, living in chronic indebtedness in Soho and often barely able to put food on the table, employed a housekeeper *and* a personal secretary: Wheen, *Karl Marx*, pp. 181–2.
- p. 96 By 1851, one-third of all the young women in London – those aged from about fifteen to twenty-five – were servants: Flanders, *The Victorian House*, p. 94.
- p. 96 The total number of servants in London, male and female, was greater than the total populations of all but the six largest English cities: Wright, *Clean and Decent*, p. 258.
- p. 96 Females in service in 1851 outnumbered males by ten to one: Horn, *The Rise and Fall of the Victorian Servant*, p. 71.

- p. 96 Most left the profession by the age of thirty-five: Inwood, *A History of London*, p. 340.
- p. 96 A large country house typically had forty indoor staff: Girouard, *The Victorian Country House*, p. 28.
- p. 96 The bachelor Earl of Lonsdale lived alone, but had forty-nine people to look after him: Laslett, *The World We Have Lost*, p. 9.
- p. 96 The first Duke of Chandos kept a private orchestra for his mealtimes: Wilson and Mackley, *Creating Paradise*, p. 52.
- p. 97 a violinist . . . was required to give his son his daily shave: Foss, *The Age of Patronage*, p. 129.
- p. 97 The sixth Baron Walsingham once single-handedly shot 1,070 grouse in a day: Mordaunt Crook, *The Rise of the Nouveaux Riches*, p. 268.
- p. 97 at weekends it was not unusual for the number of people within a country house to swell by as many as 150: Girouard, *The Victorian Country House*, p. 28.
- p. 97 Lord Charles Beresford, a well-known rake, let himself into what he believed was his mistress's bedroom and with a lusty cry of 'Cock-a-doodle-doo!' leapt into the bed: Cannadine, *The Pleasures of the Past*, p. 106.
- p. 97 To avoid such confusions, guests at Wentworth Woodhouse, a stately pile in Yorkshire, were given silver boxes containing personalized confetti, which they could sprinkle through the corridors to help find their way back to, or between, rooms: *Country Life*, untitled book review, 1 March 2007.
- p. 97 The average country house might have as many as 600 towels: Hardyment, *Home Comfort*, p. 49.
- p. 98 Writing in 1925, one retired servant recalled how early in his career he had had to light a fire, polish twenty pairs of boots and clean and trim thirty-five lamps, all by the time the rest of the household began to stir: Sambrook, *The Country House Servant*, p. 47.
- p. 98 'The lodgers sometimes threw you a kind word, but never one that recognized you as one of our kin; only the pity that might be extended to a dog': Quoted in Horn, *The Rise and Fall of the Victorian Servant*, p. 19.
- p. 98 As a rule each active bedroom had to be visited and refreshed five times between breakfast and bedtime: Sambrook, *The Country House Servant*, p. 82.
- p. 98 A gallon of water weighs eight pounds and a typical bath held 45 gallons: Sambrook, *The Country House Servant*, p. 89.

- p. 98 Furniture, fire grates, curtains, mirrors, windows, marble, brass, glass and silver – all had to be cleaned and polished regularly, usually with the household's own particular brand of home-made polish: Hardyment, *Home Comfort*, pp. 25 and 44.
- p. 99 Before being put away, knives were greased with mutton fat (to defeat rusting) and wrapped in brown paper: Garrett, *At Home*, p. 88.
- p. 99 One was marketed as 'The Servant's Friend': Gardiner, *The Edwardian Country House*, p. 59.
- p. 99 At Manderston, in Scotland, a team of workers had to devote three full days twice a year to dismantling, polishing and then reassembling a grand staircase: Gardiner, *The Edwardian Country House*, p. 15.
- .
- p. 99 the butler and his staff were required to put down spare stair carpet around the dining-room table before setting it: Garrett, *At Home*, p. 88.
- p. 99 Commercial boot polishes didn't become available until the 1890s: Hardyment, *From Mangle to Microwave*, p. 170.
- p. 100 One bought bolts of cloth and had them made up into tablecloths, sheets, shirts, towels and so on: Kelly, *Beau Brummell*, p. 165.
- .
- p. 100 Most large households had a still-room for distilling spirits and here were brewed an exhaustive repertoire of items: Hardyment, *Home Comfort*, p. 44.
- p. 100 The author of one mid-nineteenth-century manual recommended that paintings be cleaned annually with a mixture of 'salt and stale urine': Garrett, *At Home*, p. 209.
- p. 100 Kerr divided the suites of offices into nine categories: kitchen, bakery and brewery, upper servants' hall . . . and thoroughfares': Girouard, *The Victorian Country House*, pp. 29–35.
- p. 100 Florence Court in Ireland had more than sixty departments: Hardyment, *Home Comfort*, p. 11.
- p. 100 quite a modest number bearing in mind that he had more than three hundred servants: Horn, *The Rise and Fall of the Victorian Servant*, p. 20.
- p. 101 Another in Wales, according to Juliet Gardiner, had a room set aside for ironing newspapers: Gardiner, *The Edwardian Country House*, p. 42.
- p. 101 The grandest or oldest homes might also have a saucery, spicery, poultry, buttery and others of more exotic provenance: Gotch, *The Growth of the English House*, p. 108.

- p. 101 'Buttery' has nothing to do with butter: Addison, *Farmhouses in the English Landscape*, p. 19.
- p. 101 In all but the most modest households owners rarely set foot in the kitchen or servants' area: Gardiner, *The Edwardian Country House*, p. 120.
- pp. 101–2 afternoon tea in one stately home was served in eleven different places to eleven different castes of people: Girouard, *The Victorian Country House*, p. 28.
- p. 102 In her history of country house servants, Pamela Sambrook notes how two sisters worked in the same house, one as a housemaid, one as a nursemaid, but were not allowed to speak or indicate acquaintance: Sambrook, *The Country House Servant*, p. 220.
- p. 102 Servants were given little time for personal grooming, and then were constantly accused of being dirty: Flanders, *The Victorian House*, pp. 111–12.
- p. 102 By the Edwardian period servants got a half day off per week and one full day per month: Gardiner, *The Edwardian Country House*, p. 139.
- p. 102 Of one, she writes: 'She is in a state of nature: untrained; uneducated . . . so that one sees a human mind wriggling undressed': *Economist*, 'Pantry Power', 27 September 2008.
- p. 102 'They are not really human beings at all': Quoted in *The Times Higher Education Supplement*, 'A Maid of One's Own,' 17 August 2007.
- p. 103 It was common for mistresses to test the honesty of servants by leaving some temptation where they were bound to find it – a coin on the floor, say – and then punishing them if they pocketed it: Horn, *The Rise and Fall of the Victorian Servant*, p. 65.
- p. 103 often the butler was required to engage in some intentional sartorial gaucherie – wearing trousers that didn't match his jacket, for instance – to ensure that his inferiority was instantly manifest: Gardiner, *The Edwardian Country House*, p. 51.
- p. 103 One handbook actually gave instructions – in fact, provided a working script – for how to humiliate a servant in front of a child, for the good of both child and servant: Bourke, *Fear*, p.88.
- p. 103 Servants' uniforms didn't become routine until the rise of cotton imports in the 1850s: Flanders, *The Victorian House*, p. 113.
- p. 104 'In giving a character, it is scarcely necessary to say that the mistress should be guided by a sense of strict justice. It is not fair for one lady to recommend

- to another a servant she would not keep herself': Mrs Beeton, *The Book of Household Management*, p. 7.
- p. 104 the gardeners were required to detour a mile when emptying their wheelbarrows: Uglow, *A Little History of British Gardening*, p. 233.
- p. 105 'The gentry walking up the stairs no longer met their last night's faeces coming down them': Girouard, *Life in the English Country House*, p. 138.
- p. 105 On one occasion the chancellor of the exchequer, Sir William Harcourt, found himself caught on open ground with nothing to hide behind but a dwarf shrub: Hibbert, *Queen Victoria*, p. 462.
- p. 105 'The division of classes is the one thing which is most dangerous and reprehensible and never intended by the law of nature and which the Queen is always labouring to alter,' the queen once wrote: Hibbert, *Queen Victoria*, pp. 461–2.
- p. 106 Footmen did most of the public jobs in the household . . . and so were often chosen for their height, bearing and general dishiness: Sambrook, *The Country House Servant*, p. 19.
- p. 106 'When the lady of fashion chooses her footman without any other consideration than his height, shape and tournure of his calf': Mrs Beeton, *The Book of Household Management*, p. 961.
- p. 106 Liaisons between footmen and mistresses were popularly supposed to be a feature of some of the more relaxed of the nation's households: Langford, *A Polite and Commercial People*, p. 119.
- p. 106 But see the luscious Ligonier: The lines of verse and the story of the duel can be found in Bowden, *Pitt Rivers*, p. 4.
- p. 107 At some point during routine maintenance it was discovered that an enterprising member of the household had, equally routinely, been tapping into it: Hardyment, *Home Comfort*, pp. 87–8.
- p. 107 Servants often made pretty good money from tips, too: Picard, *Doctor Johnson's London*, p. 120.
- p. 107 In 1776, a visitor to Wilton House noted that she was visitor number 3,025 that year, and it was still only August: Wilson and Mackley, *Creating Paradise*, p. 81.
- p. 107 Some properties received so many sightseers that arrangements had to be formalized to keep things under control: Flanders, *Consuming Passions*, pp. 212–13.
- p. 107 Rokeby Hall, in Yorkshire, opened a tea room: Richardson, *The Arcadian Friends*, p. 327.

- p. 107 Mrs Beeton, predictably, had a great deal to say about how many servants one should have depending on financial position and breeding: Rivers *et al*, *The Name of the Room*, pp. 119–20.
- p. 108 In practice, however, it appears that most people didn't employ nearly as many people as Mrs Beeton thought they should: Hardyment, *From Mangle to Microwave*, p. 35.
- p. 108 A much more typical household was that of Thomas and Jane Carlyle, the historian and his wife, who employed a single maid at 5 Great Cheyne Row in Chelsea: In 1877, the address became 24 Cheyne Row. The house is now in the care of the National Trust, and is eminently worth a visit.
- p. 108 In the Carlyles' house, the maid didn't have a room of her own, but lived and slept in the kitchen: Holme, *The Carlyles at Home*, p. 9.
- p. 108 There the maid perched among sacks of potatoes and other provisions until she heard the scrape of Carlyle's chair, the tap of his pipe on the grate and the sounds of his retiring, which was often very late, and could at last claim her spartan bed: Holme, *The Carlyles at Home*, p. 9.
- p. 108 In thirty-two years at Great Cheyne Row, the Carlyles employed thirty-four maids: Flanders, *The Victorian House*, p. 96.
- p. 108–9 Sometimes the servants failed spectacularly, as when Mrs Carlyle came home one afternoon in 1843 to find her housekeeper dead drunk on the kitchen floor, 'with a chair upset beside her and in the midst of a perfect chaos of dirty dishes and fragments of broken crockery': Horn, *The Rise and Fall of the Victorian Servant*, p. 107.
- p. 109 On another occasion Mrs Carlyle learned to her horror that a maid had given birth to an illegitimate child in the downstairs parlour while she was away: Horn, *The Rise and Fall of the Victorian Servant*, p. 187.
- p. 109 At that time, the Carlyles had only recently moved to London from their native Scotland, with the hope that Thomas would there fashion a career as a writer: *The Review of English Studies*, 'The Collected Letters of Thomas and Jane Welsh Carlyle', November 1978.
- p. 110 Mill's rap was heard at the door: The full letter appears in Carlyle, *The Collected Letters of Thomas and Jane Welsh Carlyle*, vol. 8, pp. 66–76.
- p. 110 Mill was an authority on the French Revolution and had told Carlyle that he had it in mind to write a book on the subject himself one day: *New Yorker*, 'Literary Lives', 8 November 2004.
- p. 111 it had been his bizarre and patently misguided practice to burn his notes as he had finished each chapter: *New Yorker*, 'Literary Lives', 8 November 2004.

- p. 111 Three weeks later, in a letter to his brother, Carlyle complained that Mill had not even had the courtesy to let them sorrow in private but had 'remained injudiciously enough to almost midnight, and my poor Dame and I had to sit talking of indifferent matters; and could not till then get our lament freely uttered': Carlyle, *The Collected Letters of Thomas and Jane Welsh Carlyle*, vol. 8, pp. 75–6.
- pp. 111–12 And worthy *Doctor Guillotin*, whom we hoped to behold one other time?: Quoted in Ashton, *Thomas and Jane Carlyle*, p. 183.
- p. 112 'He was our English Tacitus': Quoted in Ashton, *Thomas and Jane Carlyle*, p. 184.
- p. 112 His written histories barely outlived him, but his personal history goes on and on, thanks in very large part to the exceptionally voluminous correspondence that he and his wife left behind – enough to fill thirty volumes of close-printed text: *The Review of English Studies*, 'The Collected Letters of Thomas and Jane Welsh Carlyle', November 1978.
- p. 112 and perhaps little wonder since Samuel spent a good deal of his time pawing the females and beating the boys: Ekirch, *At Day's Close*, p. 277.
- p. 112 'with a cane or a birch or a whip or a rope's end, or even a salted eel': Picard, *Restoration London*, p. 177.
- p. 113 Pepys was also a great one for dismissing servants: For a concise survey of the subject, see 'The Servants of Samuel Pepys' in the *Oxford Dictionary of National Biography*.
- p. 113 During the eight and a half years of his diary Pepys had sex with at least ten women other than his wife and sexual encounters with forty more: Ekirch, *At Day's Close*, p. 193.
- p. 113 One interesting exception was Hannah Cullwick, who kept an unusually thorough diary for nearly forty years: The details here are taken from Cullwick, *The Diaries of Hannah Cullwick, Victorian Maidservant*.
- p. 116 Laundry duty was so despised that in larger households servants were sometimes sent to the laundry as a punishment: Sambrook, *The Country House Servant*, p. 104.
- p. 116 a straightforward load – one involving sheets and other household linens, say – was likely to incorporate at least eight separate processes: Flanders, *The Victorian House*, pp. 126–7.
- p. 117 The irons were heavy in themselves and it was necessary to press down with great force to get the desired results: Sambrook, *The Country House Servant*, p. 183.
- p. 117 On laundry day it was often necessary for somebody to get up as early as 3 a.m. to get the hot water going: Flanders, *The Victorian House*, p. 101.

- p. 117 Some houses sent their laundry out, but until the invention of carbolic acid and other potent disinfectants, this was always attended with the fear that the laundry would come back infected with some dread disease like scarlet fever: Sambrook, *The Country House Servant*, pp. 189–209.
- p. 117 Whiteley's, a large London department store, offered a laundry service beginning in 1892 but it didn't do well until a store manager thought to post a notice that servants' clothing and customers' clothing were always washed separately: Flanders, *The Victorian House*, pp. 118–19.
- p. 118 'When Jefferson wrote that he planted olive trees and pomegranates, one must be reminded that he wielded no shovel, but simply directed his slaves': Quoted in Brodie, *Thomas Jefferson*, p. 89.
- p. 118 A seventeenth-century black man in Virginia named Anthony Johnson acquired a 250-acre tobacco plantation and grew prosperous enough to be a slave owner himself: Gordon, *An Empire of Wealth*, p. 19.
- p. 118 When Benjamin Franklin moved to London in 1757, he brought with him two slaves, named King and Peter: *American Heritage*, 'Franklin's Last Home', April 2006.
- p. 118 What America didn't have a lot of were free servants: Rybczynski, *Home*, p. 155.
- p. 118 Most refused to wear livery and many expected to sit down to meals with the family – to be treated, in short, as something much closer to equals: Cowan, *More Work for Mother*, pp. 119–25.
- p. 118 In 1899, the Boston School of Housekeeping calculated that a coal stove required fifty-four minutes of heavy maintenance a day – emptying ash, replenishing coal, blacking and polishing and so on: Cowan, *More Work for Mother*, p. 62.
- p. 119 In fact, changing lifestyles and improved technologies mostly just brought more work to women through bigger houses, more complicated meals, more copious and frequent laundry, and ever higher expectations of cleanliness: Cowan, *More Work for Mother*, pp. 98–9.

Chapter 6: The Fusebox <heading>

- pp. 121–2 Not since the Middle Ages had Britain been so dark, and the consequences were noisy and profound: The effects of the blackout, and all else to do with life on the home front, are wonderfully summarized by Juliet Gardiner in *Wartime: Britain 1939–1945*. The quotation from the *British Medical Journal* appears on p. 52.

- p. 122 A candle – a good candle – provides barely a hundredth of the illumination of a single 100-watt light bulb: Laing, *Lighting*, p. 67.
- p. 122 a guest at a Virginia plantation, Nomini Hall, marvelled in his diary how 'luminous and splendid' the dining room was during a banquet because seven candles were burning: McLaughlin, *Jefferson and Monticello*, pp. 368–9.
- p. 123 The writer Joseph Addison routinely rose at 3 a.m. in summer (and sometimes even earlier), but not till 11 in winter: Harris, *Keeping Warm*, p. 11.
- p. 123 Visitors to eighteenth-century London often noted that the shops were open till 10 at night: Ekirch, *At Day's Close*, p. 326.
- p. 123 a dinner gathering could last for seven hours or more: Pullar, *Consuming Passions*, p. 158.
- p. 123 Balls often went on until two or three in the morning, at which time a supper would be served: Lehmann, *The British Housewife*, p. 316.
- p. 123 'and played at faro, etc., as if he had not been dying in the next room': Quoted in Stewart, *The Town House in Georgian London*, p. 43.
- p. 123 Lighting in London was still so poor in 1763 that James Boswell was able to have sex with a prostitute on Westminster Bridge: Inwood, *A History of London*, p. 366.
- p. 124 people were often reluctant to go out at night for fear that 'they may be blinded, knocked down, cut or stabbed': Ekirch, *At Day's Close*, p. 34.
- p. 124 To avoid smacking into the unyielding, or being waylaid by brigands, people often secured the services of linkboys: Ekirch, *At Day's Close*, p. 125.
- p. 124 sometimes led their customers into back alleys where they or their confederates relieved the hapless customer of money and silken items: Cockayne, *Hubbub*, pp. 225–7.
- p. 124 The very brightest gas street lamps provided less light than a modern 25-watt bulb: Cockayne, *Hubbub*, p. 278.
- p. 124 As late as the 1930s, almost half of London streets were still lit by gas: Inwood, *City of Cities*, p. 280.
- p. 124 An Elizabethan Statute of Artificers of 1563 laid down that all artificers (which is to say, artisans and craftsmen) and labourers 'must be and continue at their work, at or before five of the clock in the morning, and continue at work, and not depart, until between seven and eight of the clock at night': Laslett, *The World We Have Lost*, p. 30, and Hibbert, *London*, p. 203.

- p. 125 In factories, workers were expected to be at their places from 7 a.m. to 7 p.m. on weekdays and from seven to two on Saturdays: Arnstein, *Britain Yesterday and Today*, pp. 24 and 45.
- p. 125 'We breakfast always at ten, and rise as much before as we please; we dine precisely at two, drink tea about six and sup exactly at nine': Quoted in *History Today*, 'The Hours of the Georgian Day', May 1974.
- p. 125 'I will give an account of one day and then you will see every day,' a young correspondent wrote to Edward Gibbon in about 1780: Lehmann, *The British Housewife*, p. 303.
- p. 125 'And then about 11 I play on the harpsichord, or I draw; at 1 I translate and 2 walk out again': Quoted in Pullar, *Consuming Passions*, p. 157.
- p. 125 The most basic form was rushlights, which were made by cutting meadow rushes into strips about a foot and a half in length and coating them in animal fat: Ekirch, *At Day's Close*, pp. 106–7.
- p. 125 A rushlight typically lasted fifteen to twenty minutes: Hardyment, *Home Comfort*, pp. 145–6.
- p. 125 Rushes were gathered once a year, in springtime, so it was necessary to work out with some care how much illumination was needed over the coming twelve months: Caspall, *Fire and Light in the Home pre-1820*, pp. 171–5.
- pp. 125–6 or at least it was until 1709, when Parliament, under pressure from the chandlers' guilds, enacted a law making it illegal to make candles at home: Bourne and Brett, *Lighting in the Domestic Interior*, p. 16.
- p. 126 During times of hardship peasants didn't have animals to slaughter and rushlights required a supply of animal fat, so they had to pass their evenings not only hungry but in the dark: Laing, *Lighting*, pp. 25–6.
- p. 126 Because it melted so swiftly, the candle was constantly guttering, and needed trimming up to forty times an hour: Laing, *Lighting*, p. 36.
- p. 126 Far superior were candles made of beeswax: Caspall, *Fire and Light in the Home pre-1820*, p. 43.
- p. 126 kept two candles out but burned only one at a time: Bourne and Brett, *Lighting in the Domestic Interior*, p. 197.
- p. 126 stormy petrels were so naturally oily that people sometimes just stuck a wick down their throats: Ekirch, *At Day's Close*, p. 108.

- p. 126 The loss of fertilizing dung from fields left a lot of land impoverished and is said to have accelerated the agricultural decline there: Ayres, *Domestic Interiors*, p. 16.
- pp. 126–7 Even over the course of an evening, a lamp might lose 40 per cent of its illuminating power as its chimney accumulated soot: Strasser, *Never Done*, pp. 60–61.
- p. 127 ‘Our noses were all black, & our clothes were perfectly gray and . . . quite ruined’: Garrett, *At Home*, p. 148.
- p. 127 But in 1783 a Swiss physicist named Ami Argand invented a lamp that increased lighting levels dramatically: Laing, *Lighting*, pp. 60–61, and Bourne and Brett, *Lighting in the Domestic Interior*, p. 132.
- p. 127 Thomas Jefferson was an early enthusiast and remarked in frank admiration how a single Argand lamp could provide illumination equal to half a dozen candles: McLaughlin, *Jefferson and Monticello*, p. 369.
- p. 127 The best light of all came from whale oil, and the best type of whale oil was spermaceti from the head of the sperm whale: Ekirch, *At Day’s Close*, p. 104, and Caspall, *Fire and Light in the Home pre-1820*, p. 215.
- p. 127 No one has ever worked out what spermaceti is for: Dolin, *Leviathan*, pp. 77–8.
- p. 128 Charles II of England thought ambergris and eggs the finest dish in existence: Dolin, *Leviathan*, p. 86.
- p. 128 the oil of sperm whale was also craved by industry as an emollient in the manufacture of soaps and paints and as lubrication for machinery: Gordon, *An Empire of Wealth*, p. 167.
- p. 128 Whale oil was an American speciality, both to produce and to consume: Gordon, *An Empire of Wealth*, pp. 167–8, and Matthews, *The Whale*, pp. 124–6.
- pp. 128–9 Whale oil was taxed heavily throughout Europe, so people there tended to use colza, which was made from the oil of cole-seeds (a member of the cabbage family), or camphene, a derivative of turpentine: Laing, *Lighting*, p. 62.
- .
- p. 129 Nobody knows how many whales were killed during the great age of whaling: Dolin, *Leviathan*, p. 420.
- p. 129 By the 1850s a gallon of whale oil sold for \$2.50: Gordon, *An Empire of Wealth*, p. 169.
- p. 129 Many species of whale – possibly all – would have vanished for ever but for a sequence of unlikely events that began in Nova Scotia in 1846 when a man

named Abraham Gesner invented what for some time would be the most valuable product on Earth: Yergin, *The Prize*, p. 23.

- p. 129 By the late 1850s, total American output was just six hundred barrels a day: *American Heritage's Invention & Technology*, 'Petroleum: What Is It Good For?', Fall 1991.
- p. 129 Coal tar became the basis of the modern chemical industry: Gordon, *An Empire of Wealth*, p. 169.
- p. 130 In 1853, on a visit to his home town of Hanover, New Hampshire, Bissell called on a professor at his alma mater, Dartmouth College, and there he noticed a bottle of rock oil on the professor's shelf: Yergin, *The Prize*, pp. 20–22.
- p. 131 The first problem for the company was where to store all the oil they were producing: *American Heritage's Invention & Technology*, 'Petroleum: What Is It Good For?', Fall 1991.
- p. 131 The gasoline had no use at all – it was way too volatile – and so was poured away, but the kerosene made a brilliant light: *American Heritage's Invention & Technology*, 'Petroleum: What Is It Good For?', Fall 1991.
- p. 132 In the year of Drake's discovery America produced two thousand barrels of oil; within ten years it was well over four million barrels and in forty years it was 60 million: Gordon, *An Empire of Wealth*, p. 254, and *American Heritage*, 'The Age of Steel', June 2001.
- p. 132 In 1878, a plot of land in Pithole City sold for \$4.37. Thirteen years earlier it had fetched \$2 million: Yergin, *The Prize*, p 31.
- p. 132 By 1877, less than twenty years after the discovery of oil in Pennsylvania, Clark had vanished from the scene and John D. Rockefeller controlled some 90 per cent of America's oil business: *New Yorker*, 'Rich Man, Richer Man', 11 May 1998.
- p. 133 To minimize that problem, gas lights were sometimes erected outside factory windows: Hardymont, *Home Comfort*, pp. 149–50.
- p. 133 Only the aspidistra seemed immune to its ill effects: Flanders, *The Victorian House*, p. 170.
- p. 133 The average room with gas was twenty times brighter than it had been before: Rybczynski, *Home*, pp. 140–41.
- p. 134 It is no coincidence that the mid-nineteenth century saw a sudden and lasting boom in newspapers, magazines, books and sheet music: Gordon, *An Empire of Wealth*, p. 163.

- p. 134 The number of newspapers and periodicals in Britain leapt from fewer than 150 at the start of the century to almost 5,000 by the end of it: Miles, *The Tribes of Britain*, p. 400.
- p. 134 By 1850 it was available in most large cities in both countries: Flanders, *The Victorian House*, p. 167.
- p. 134 The ironic upshot, as Mark Girouard has noted, is that not only middle-class homes but institutions like lunatic asylums and prisons tended to be better lit – and, come to that, better warmed – long before England’s stateliest homes were: Girouard, *Life in the English Country House*, p. 263.
- p. 134 Thomas Jefferson complained that he had to stop writing one evening because the ink had frozen in his inkwell: Brand, *How Buildings Learn*, p.44.
- p. 134 A diarist named George Templeton Strong recorded in the winter of 1866 that even with two furnaces alight and all the fireplaces blazing, he couldn’t get the temperature of his Boston home above thirty-eight degrees: *American Heritage*, ‘When Our Ancestors Became Us’, December 1989.
- p. 135 Franklin’s stove was an undoubted improvement – though more on paper than in practice: *The Craven Street Gazette*, ‘Franklin and Innovation: His Famous Stove’, Issue 11, 2005–6.
- p. 135 Corn cobs were widely used as fuel, as were dried cowpats: Schlereth, *Victorian America*, pp. 112–13.
- p. 135 Stoves became something of an American obsession: The subject is thoroughly examined by Howell John Harris in ‘Conquering Winter: U.S. Consumers and the Cast-Iron Stove’, *Building Research & Information*, 2008.
- p. 135 A typical stove in 1899, according to a study in Boston, burned some three hundred pounds of coal in a week, produced twenty-seven pounds of ash, and required three hours and eleven minutes of attention: Schlereth, *Victorian America*, pp. 130–31.
- p. 136 Samuel Pepys recorded in his diary how he bent over a candle while working at his desk, and soon afterwards became aware of a horrible, pungent smell, as of burning wool: Laing, *Lighting*, p. 55.
- p. 136 To reduce dangers at night, fires were covered with a kind of domed lid called a *couvre-feu* (from which comes the term ‘curfew’): Caspall, *Fire and Light in the Home pre-1820*, p. 15.
- p. 136 Technological refinements sometimes improved the quality of light, but just as often increased the risk of fire: Strasser, *Never Done*, pp. 60–61.
- p. 136 Fires in public places became a great worry, too, especially after the development of a now-forgotten but lively form of illumination known as the Drummond light: *American Heritage’s Invention & Technology*, ‘The Limelight’, Fall 1997.

- p. 137 Over the nineteenth century as a whole, nearly ten thousand people were killed in theatre fires in Britain, according to a report published in 1899 by William Paul Gerhard, the leading fire authority of the day: Bourke, *Fear*, p. 58
- p. 137 From about 1840 passenger carriages came with wood- or coal-burning stoves in the winter and oil lamps to read by, and the scope for catastrophes on a lurching train is easily imagined: *American Heritage*, 'How the Railroads Defeated Winter', Winter 1998.
- p. 137 Altogether it claimed 12,000 lives: Hanson, *The Dreadful Judgement*, p. 82
- p. 137 For 454 years, the fire of 1212 was known as the Great Fire of London: Hanson, *The Dreadful Judgement*, p. 82
- p. 138 Boston had them in 1653, 1676, 1679, 1711, and 1761: Holtz, *Lost Boston*, p. 222.
- p. 138 But all city fires pale when compared with the fire that swept through Chicago on a windy night in October 1871: The best account of the emotional and economic consequences of the great Chicago fire is Miller, *American Apocalypse*. Other interesting details can be found in Rybczynski, *City Life*, pp. 116–17; Sutherland, *The Expansion of Everyday Life*, pp. 212–14; and *American Heritage*, 'When Chicago Burned', August 1963.
- p. 138 Originally the joists in English terraced houses ran from side to side and sat on the partition walls between houses: Author interview with Piers Gough, architect and historian, November 2006.
- p. 138 Giovanni Aldini, realizing that money could be made from this, devised a stage show in which he applied electricity to animate the bodies of recently executed murderers and the heads of guillotine victims: Simon, *Dark Light*, p. 15.
- p. 139 Charles Darwin, driven to desperation by a mysterious lifelong malady that left him chronically lethargic, routinely draped himself with electrified zinc chains: Desmond and Moore, *Darwin*, p. 405.
- p. 139 Holmes's light was made by generating a strong electric current and forcing it to jump between two carbon rods: Bowers, *A History of Electric Light and Power*, pp. 77–8 and Howarth, *The Year Is 1851*, p. 144.
- p. 139 a trick that Humphry Davy had demonstrated but not capitalized upon more than forty years earlier: Bourne and Brett, *Lighting in the Domestic Interior*, p. 229.
- p. 139 The first one was installed at the South Foreland Lighthouse, just outside Dover, and powered up on 8 December 1858: This information came from a visit the author made to the lighthouse in August 2007.

- p. 139 arc lighting was never a huge success because it was complicated and expensive: Laing, *Lighting*, p. 64.
- p. 140 In Paris, a Russian-born inventor named Paul Jablochhoff developed a form of arc lights that came to be known as Jablochhoff candles: Bowers, *A History of Electric Light and Power*, pp. 65–6 and 106–10.
- p. 140 As early as 1840, seven years before Thomas Edison was even born, Sir William Grove, a lawyer and judge who was also a brilliant amateur scientist with a particular interest in electricity, demonstrated an incandescent lamp which worked for several hours: Hobsbawm, *Industry and Empire*, p. 180.
- p. 140 In 1867, his business partner and brother-in-law John Mawson died in a freak accident while disposing of nitroglycerine on a moor outside the city: Weightman, *The Industrial Revolutionaries*, p. 338.
- p. 141 Then in the early 1870s Hermann Sprengel, a German chemist working in London, invented a device that came to be called the Sprengel mercury pump: Bowers, *A History of Electric Light and Power*, p. 113.
- p. 141 He didn't scruple to cheat or lie, and was prepared to steal patents or bribe journalists: Simon, *Dark Light*, p. 83.
- p. 141 In the words of one of his contemporaries, he had 'a vacuum where his conscience ought to be': Bodanis, *Electric Universe*, p. 40.
- p. 141 Edison dispatched men to the far corners of the world to search for potential filaments: Bowers, *A History of Electric Light and Power*, p. 118.
- p. 141 They tried everything, including even hair from the luxuriant red beard of a family friend: *New Yorker*, 'Profiles', 28 December 1929.
- p. 141 What they didn't realize was that the light was mostly non-electrical: Simon, *Dark Light*, p. 88.
- p. 142 In January or February 1879, Swan gave a public display of his new electric incandescent lamp in Newcastle: Bowers, *A History of Electric Light and Power*, pp. 114–15.
- p. 142 Edison wired a whole district of lower Manhattan, around Wall Street: Simon, *Dark Light*, p. 89.
- p. 142 Back at his workshops, several of his men lost teeth from mercury poisoning from over-exposure to Sprengel's mercury pump: *New Yorker*, 'The Wizard', 4 January 1930.
- p. 142 Where Edison truly excelled was as an organizer of systems: Strasser, *Never Done*, pp. 73–6.

- p. 143 Indeed, he didn't even file for a patent: Bowers, *A History of Electric Light and Power*, p. 118.
- p. 143 By modern standards those first lights were pretty feeble, but to people of the time an electric light was a blazing miracle – 'a little globe of sunshine, a veritable Aladdin's lamp', as a journalist for the *New York Herald* breathlessly reported: Gordon, *An Empire of Wealth*, p. 303.
- p. 143 As early as 1893, the Columbian Exposition in Chicago displayed a 'model electric kitchen': Strasser, *Never Done*, pp. 73–5.
- p. 143 White porcelain models didn't come in until the 1920s – and they were considered very odd when they did: Fortey, *Objects of Desire*, p. 166.
- p. 144 In England Hilaire Belloc offered a snatch of doggerel that caught the public mood: Quoted in Hardyment, *Home Comfort*, p. 152.
- p. 144 Edison's former partner Franklin Pope electrocuted himself while working on the wiring in his own house: Simon, *Dark Light*, p. 282.
- p. 144 The new Dreamland Park at Coney Island burned down in 1911 because of a fire caused by a bursting light bulb: Bascomb, *Higher*, p. 24.
- p. 144 but then had the whole system taken out when it was suspected of being the source of a small fire: Strasser, *Never Done*, p. 76.
- p. 144 One authority named S. F. Murphy identified a whole host of electrically induced maladies – eyestrain, headaches, general unhealthiness and possibly even 'the premature exhaustion of life': Hardyment, *Home Comfort*, p. 144.
- p. 144 One architect was certain electric light caused freckles: Schlereth, *Victorian America*, p. 115.
- pp. 144–5 When sockets did finally come in, around the turn of the century, they were available only as part of overhead light fittings: Simon, *Dark Light*, p. 254.
- p. 145 At Manderston, a stately home in Scotland, until well into Edwardian times it was the practice to throw cushions at one particularly lively wall outlet: Gardiner, *The Edwardian Country House*, p. 61.
- p. 145 The use of electricity in the United States went from 79 kilowatt hours per capita in 1902 to 960 in 1929 to well over 13,000 today: Gordon, *An Empire of Wealth*, p. 307.
- p. 145 his genius was not in creating electric light, but in creating methods of producing and supplying it on a grand commercial scale: Strasser, *Never Done*, p. 73.

Chapter 7: The Drawing Room <heading>

- p. 147 Until the eighteenth century the idea of having comfort at home was so unfamiliar that there wasn't even a word for the condition . . . The first person to use the word in its modern sense was Horace Walpole: According to the *Oxford English Dictionary*, Walpole's letter was dated 1 July 1770, and was to his friend George Montagu.
- p. 148 *Salon*, meanwhile, became indelibly attached to places associated with artistic endeavours before being appropriated (from about 1910) by providers of hair care and beauty treatments: Girouard, *Life in the French Country House*, pp. 132–44.
- p. 148 'Parlour', the word long favoured by Americans for the main room of the home, has a kind of nineteenth-century frontier feel to it, but in fact is the oldest of all: Bushman, *The Refinement of America*, pp. 273–9.
- p. 149 Traditionally, most English farmland was divided into long strips called furlongs: Dyer, *Making a Living in the Middle Ages*, p. 22.
- p. 149 An academic named W. G. Hoskins calculated (in 1964) that between 1480 and 1700, one harvest in four was bad, and almost one in five was catastrophically bad: Coward, *The Stuart Age*, p. 5.
- p. 149 Farmers also benefited from a new wheeled contraption invented in about 1700 by Jethro Tull, a farmer and agricultural thinker in Berkshire: Tull and his invention are discussed fully in Russell, *A History of Agricultural Science in Great Britain*, pp. 42–5.
- p. 150 A medieval sheep gave about one and a half pounds of wool; re-engineered eighteenth-century sheep gave up to nine pounds: Catchpole, Clark and Peberdy, *Burford*, p. 41.
- p. 150 Between 1700 and 1800 the average weight of sheep sold at Smithfield Market in London more than doubled, from thirty-eight pounds to eighty: Trevelyan, *Illustrated English Social History*, vol. 3, p. 150.
- p. 150 Beef cattle expanded similarly: Dyer, *Making a Living in the Middle Ages*, p. 25.
- p. 151 The third Earl of Burlington, to take one example of many, owned vast estates in Ireland – some 42,000 acres in all – and never visited the country: Lees-Milne, *Earls of Creation*, p. 104.
- p. 151 By one count, at least 840 large country houses were built in England between 1710 and the end of the century: *Journal of the Society of Architectural Historians*, 'English Neo-Classical Architecture', December 1992.

- p. 151 'dispersed like great rarity plums in a vast pudding of a country': Quoted in Cockayne, *Hubbub*, p. 240.
- p. 151 Though the name is now pronounced 'Van-bruh' or 'Van-burra' (like the terminal diphthong of 'Edinburgh' or 'Barbara'), it appears to have been pronounced 'Vanbrook' in his own lifetime: Except where otherwise indicated, the biographical details concerning Vanbrugh come from Downes, *Sir John Vanbrugh*, the definitive biography.
- p. 153 Vanbrugh, it must be said, did have the back-up of a real architect of undoubted gifts, Nicholas Hawksmoor: For a discussion of the achievements and joint reputations of the two, see *Journal of the Society of Architectural Historians*, 'Seeing Vanbrugh and Hawksmoor', December 1984. For influences on Vanbrugh's style, see *Journal of the Society of Architectural Historians*, 'John Vanbrugh's Architecture: Some Sources of His Style', June 1987.
- p. 153 Vanbrugh and Carlisle were both members of a secretive society known as the Kit-Cat Club: Richardson, *The Arcadian Friends*, p. 62.
- p. 155 Late on the night of 9 November 1940, a fire was discovered in the east wing: Details of the fire, with photographs, are on display to visitors at Castle Howard.
- p. 155 Vanbrugh now landed the commission for one of the most important houses ever built in Great Britain, Blenheim Palace, that colossal explosion of magnificence at Woodstock in Oxfordshire: The story of Vanbrugh's long struggle to get Blenheim built is well told in *Journal of the Society of Architectural Historians*, 'John Vanbrugh and the Blenheim Palace Controversy', December 1974.
- pp. 155–6 A frontage of 250 feet for a stately home was enormous; at Blenheim the frontage was to be 856 feet: Yarwood, *The Architecture of England*, p. 249.
- p. 157 She thought the palace 'too big, too dark and too martial': Baird, *Mistress of the House*, pp. 42–3.
- p. 157 The Earl of Ailesbury dismissed it as 'one mass of stone without taste or relish': Cruickshank, *The Story of Britain's Best Buildings*, p. 128.
- p. 157 'Lie heavy on him, earth, for he / Laid many a heavy load on thee': Quoted in *College Art Journal*, 'The Architect Vanbrugh and the Wits', Summer 1947. No one was more scornful of Vanbrugh than Horace Walpole. He found him irritatingly undisciplined. Of Vanbrugh's work, Walpole wrote: 'He undertook vast designs, and composed heaps of littleness. The style of no age, no country, appears in his works; he broke through all rule, and compensated for it by no imagination.' (Quoted in Foss, *The Age of Patronage*.)
- p. 158 Hardwick Hall . . . was one of the great buildings of its age, yet it is merely supposed that Robert Smythson was the architect: Jackson-Stops, *The Country House in Perspective*, p. 45.

- p. 159 he was one of a quartet of brothers who all became successful architects, though Robert was the undoubted genius of the family: Yarwood, *The Architecture of England*, p. 318.
- p. 159 He was arrogant and egotistical and treated his employees poorly, paying them little and keeping them in a kind of perpetual servitude: Harris, *The Genius of Robert Adam*, p. 2.
- p. 159 At one point they employed two thousand people: Beard, *The Work of Robert Adam*, p. 21.
- p. 159 They designed not just houses but every object within them – furniture, fireplaces, carpets, beds, lamps, and everything else down to incidental objects like doorknobs, bell pulls and inkstands: Yarwood, *The Architecture of England*, p. 321.
- p. 159 Indeed one of his contemporary critics called him ‘a Pastry Cook’: Beard, *The Work of Robert Adam*, p. 17.
- p. 159 By the late 1780s, Adam was being denounced as ‘sugary and effeminate’ and had fallen so far out of fashion that he retreated to his native Scotland, where he died in 1792: Harris, *The Genius of Robert Adam*, p. 16.
- p. 160 By the 1860s his reputation was undergoing a revival: Harris, *The Genius of Robert Adam*, p. 17.
- p. 160 It was called Fonthill Abbey, and it was the creation of two strange and fascinating men: William Beckford and the architect James Wyatt: The facts of Beckford’s life come principally from Alexander, *England’s Wealthiest Son: A Study of William Beckford*, and from Beckford’s own writings, found in *Life at Fonthill, 1807–1822*. The facts concerning the life of James Wyatt are drawn principally from Dale, *James Wyatt*. Much additional interesting material on Fonthill Abbey itself can be found in Thurley, *Lost Buildings of Britain*, and Dutton, *The English Country House*.
- p. 165 Among the additional, incidental planned structures was a mighty tomb, one hundred and twenty-five feet long: Mowl, *William Beckford*, pp. 236–7.
- p. 165 Walpole invented a term, ‘gloomth’, to convey the ambience of Gothick; Wyatt’s houses were the very quintessence of gloomth: Kelly, *Beau Brummell*, p. 57.
- p. 166 Rashly, Wyatt used a new kind of rendering called Parker’s Roman cement: The inadequacies of the Reverend Mr Parker’s cement are discussed in Parissien, *The Georgian House*, p. 76, and Clifton-Taylor, *The Pattern of English Building*, pp. 367–8. The topic is also discussed in Thurley, *Lost Buildings of Britain*, pp. 50–51.
- p. 168 The term ‘middle class’ wasn’t coined until 1745 (in a book on the Irish wool trade, of all things): The book was called *Scheme to Prevent Running Irish Wools to France*, and was written by J. Bradshaw.

- p. 169 Carpets, mirrors, curtains, upholstered and embroidered furniture and a hundred things more that were rarely found in homes before 1750 now became commonplace: Langford, *A Polite and Commercial People*, pp. 70–71.
- p. 169 The most prized wood of all was mahogany from the Caribbean: Davidson, *The American Heritage History of Colonial America*, pp. 194–200, and Goodman and Norberg, *Furnishing the Eighteenth Century*, pp.18–22.
- p. 170 Shellac is a hard, resinous secretion from the Indian lac beetle: Berenbaum, *Bugs in the System*, pp. 120–25.
- .
- p. 170 His first appearance in the written record is in 1748, when he arrives in London: Gilbert, *The Life and Works of Thomas Chippendale*, p. 127.
- p. 171 a new type of maker and purveyor of household furnishings known as an upholster: *Eighteenth Century Studies*, 'British Rococo as Social and Political Style', Spring 1990.
- p. 171 One of the most successful, George Seddon, employed four hundred workmen – carvers, gilders, joiners, makers of mirrors and brass, and so on: Coleridge, *Chippendale Furniture, Circa 1745–1765*, pp.152–4.
- p. 171 He also provided an extremely complete service, making and selling chairs, occasional tables, dressing tables, writing tables, card tables, bookcases, bureaus, mirrors, clock cases, candelabra, candle stands, music stands, sconces, commodes and an exotic new contrivance that he called a 'sopha': Coleridge, *Chippendale Furniture, Circa 1745–1765*, pp. 96–7.
- p. 171 The firm also stocked wallpaper and carpets, and undertook repairs, furniture removals and even funerals: Parissien, *Adam Style*, p. 192.
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- p. 171 St Martin's Lane alone had thirty furniture makers in the eighteenth century: Gilbert, *The Life and Works of Thomas Chippendale*, p. 132.
- p. 171 He issued a book of designs called *The Gentleman and Cabinet-Maker's Director*, containing 160 plates: Coleridge, *Chippendale Furniture, Circa 1745–1765*, p. 85.
- .
- p. 172 Even if a piece is a 'genuine' Chippendale, it doesn't mean that Thomas Chippendale ever touched it or was even aware of its existence: Rybczynski, *Home*, p. 126.
- p. 172 George Hepplewhite's *Cabinet-Maker and Upholsterer's Guide* was published in 1788 and Thomas Sheraton followed with the *Cabinet-Maker and Upholsterer's Drawing-Book*, issued in instalments between 1791 and 1794: Gloag, *English Furniture*, pp. 101–10.

- p. 173 Rannie was the brains of the operation and without him Chippendale lurched from crisis to crisis for the rest of his life: Coleridge, *Chippendale Furniture, Circa 1745–1765*, pp. 77–9.
- p. 173 Chippendale had to threaten David Garrick, the actor and impresario, with legal action: Gilbert, *The Life and Works of Thomas Chippendale*, p. 73.
- p. 173 At his death in 1779, his personal worth had sunk to just £28 2s 9d: Gilbert, *The Life and Works of Thomas Chippendale*, pp. 13–16.
- p. 173 No obituary appeared in any paper: Gilbert, *The Life and Works of Thomas Chippendale*, p. 17.
- p. 173 Hepplewhite's shop was in a down-at-heel district, Cripplegate, and his identity sufficiently obscure that his contemporaries referred to him variously as Kepplewhite and Hebblethwaite: Wright, *Warm and Snug*, p. 143.
- p. 174 Some six hundred pieces of Chippendale furniture have now been confirmed altogether: Cohen, *Household Gods*, p. 146.
- p. 175 chairs and other furniture were generally pushed up against the walls: Thornton, *Seventeenth-Century Interior Decoration in England, France and Holland*, pp. 219 and 283.
- p. 175 'We wore out the Wind and the Weather, the Opera and the Play . . . and every topic that would do in a formal circle': Quoted in Baird, *Mistress of the House*, p. 63.
- p. 175 Manufacturers struggled to get square edges where fabric met wood – piping and cording were originally brought in as a way of disguising these inadequacies – and were frequently out of their depths at producing padding that would maintain a permanent domed shape on the seat: Thornton, *Seventeenth-Century Interior Decoration in England, France and Holland*, pp. 217–18.
- p. 176 Fabric upholsterers also had the problem that many pre-industrial fabrics could be produced only in widths of about twenty inches, creating a need for seams in awkward places: Thornton, *Seventeenth-Century Interior Decoration in England, France and Holland*, p. 219.
- p. 176 Only after the invention of the flying shuttle by John Kay in 1733 did it become possible to produce fabrics in widths of three feet or so: Parissien, *Palladian Style*, p. 182, and Ayres, *Domestic Interiors*, p. 126.
- p. 176 The upshot is that by late in the eighteenth century, households were full of features that would have been the wildest indulgences a century before: Wharton and Codman, *The Decoration of Houses*, p. 267.

Chapter 8: The Dining Room <heading>

- p. 178 For a century or so no table of discernment was without its epergne, but why it was called an epergne no one remotely knows: *The Oxford English Dictionary* suggests that the word may come from the French *épargne*, meaning saving or economy, but concedes that there is no evidence for it. The first recorded use of *epergne* in English was in 1765.
- p. 178 Two of the casters contained salt and pepper, but what went into the third caster is unknown: Brett, *Dinner Is Served*, p. 127.
- p. 179 All food was believed to contain a single vague but sustaining substance – ‘the universal aliment’: Cummings, *The American and His Food*, p. 4.
- p. 179 Vasco da Gama on a cruise to India and back encouraged his men to rinse their mouths with urine: Fernández-Armesto, *Food: A History*, p. 42.
- p. 179 On a three-year voyage in the 1740s, a British naval expedition under the command of Commodore George Anson lost 1,400 men out of two thousand who sailed: Harvie, *Limeys*, pp. 66–77.
- p. 180 In the 1760s, a Scottish doctor named William Stark, evidently encouraged by Benjamin Franklin, conducted a series of patently foolhardy experiments in which he tried to identify the active agent by, somewhat bizarrely, depriving himself of it: Carpenter, *The History of Scurvy and Vitamin C*, pp. 200–201.
- p. 180 On his circumnavigation of the globe in 1768–71, Captain Cook packed a range of antiscorbutics to experiment on, including thirty gallons of carrot marmalade and a hundred pounds of sauerkraut for every crew member: Carpenter, *The History of Scurvy and Vitamin C*, pp. 80–84.
- p. 181 Not until 1897 did a Dutch physician named Christiaan Eijkman, working in Java, notice that people who ate wholegrain rice didn’t get beriberi: Cummings, *The American and His Food*, pp. 116–17.
- p. 181 the name was changed to ‘vitamins’ to make it ‘less emphatically inaccurate’, in Anthony Smith’s nice phrase: Smith, *The Body*, p. 441.
- p. 181 Funk also asserted that there was a direct correlation between a deficiency of specific amines and the onset of certain diseases – scurvy, pellagra and rickets in particular: Carpenter, *The History of Scurvy and Vitamin C*, p. 178.
- p. 181 The leading medical textbook of the day continued to insist that scurvy was caused by any number of factors – ‘insanitary surroundings, overwork, mental depression and exposure to cold and damp’: Carpenter, *The History of Scurvy and Vitamin C*, p. 173.
- p. 182 Finally, in 1939, a Harvard Medical School surgeon named John Crandon decided to settle matters once and for all by the age-old method of withholding Vitamin C from his diet for as long as it took to make himself really ill: Carpenter, *The History of Scurvy and Vitamin C*, pp. 200–202.

- p. 182 It was called K because its Danish discoverer, Henrik Dam, dubbed it *Koagulations vitamin* for its role in blood clotting: McGee, *On Food and Cooking*, p. 536.
- p. 182 Later, folic acid was added to the group: The B Vitamins are discussed in McGee, *On Food and Cooking*, pp. 540–43.
- p. 182 It is almost impossible to define them in a way that comfortably embraces them all: Fernández-Armesto, *Food: A History*, p. 57.
- p. 183 Within the animal kingdom only humans and guinea pigs are unable to synthesize Vitamin C in their own bodies: Carpenter, *The History of Scurvy and Vitamin C*, pp. 174–83.
- p. 183 Three ounces of Vitamin A, lightly but evenly distributed, will keep you purring for a lifetime: Smith, *The Body*, p. 442.
- p. 183 The same considerations exactly apply with the vitamins' fellow particles the minerals: McGee, *On Food and Cooking*, pp. 543–50.
- p. 183 Remove zinc from your diet and you will get a condition known as hypogeusia in which your taste buds stop working, making food boring or even revolting, but until as recently as 1977 zinc was thought to have no role in diet at all: *New Yorker*, 'Annals of Medicine', 12 September 1977.
- p. 183 Others are also unnecessary but far more benign, of which the most notable is gold: Selinus, *Essentials of Medical Geology*, p. 19.
- p. 183 It has been estimated that as little as 1/25th of a teaspoon of mercury could poison a sixty-acre lake: *USA Today*, 'Power Plants Are Focus of Drive to Cut Mercury', 30 October 2007.
- p. 184 Of the rest, some twenty-two elements are known or thought to be of central importance to life : Selinus, *Essentials of Medical Geology*, pp. 162–3.
- p. 184 So most of us are not taking in anything like the recommended daily amount – not that anyone really knows what that amount should be: Selinus, *Essentials of Medical Geology*, p. 339.
- p. 184 We don't need all that much – 200 milligrams a day, about what you would get with six or eight vigorous shakes of a salt cellar – but we take in about sixty times that amount on average: Steingarten, *The Man Who Ate Everything*, p. 198.
- p. 185 Who would guess that an ounce of cornflakes contains more salt than an ounce of salted peanuts?: Steingarten, *The Man Who Ate Everything*, p. 199.
- p. 185 the absence of salt in the diet awakes no craving: Kurlansky, *Salt*, p. 9.

- p. 185 Aztecs, by contrast, acquired salt by evaporating their own urine: Kurlansky, *Salt*, p. 203.
- p. 185 Every society in the world in which salt is freely available consumes, on average, forty times the amount needed to sustain life: Steingarten, *The Man Who Ate Everything*, p. 198.
- p. 185 Henry VIII had 25,000 oxen slaughtered and salted for one military campaign in 1513: Hart-Davis, *What the Tudors and Stuarts Did for Us*, p. 52.
- .
- p. 186 The vine is called *Piper nigrum*: Turner, *Spice*, p. xxi.
- p. 186 'They arrive with gold and depart with pepper,' one Tamil trader remarked in wonder: Fernández-Armesto, *Food: A History*, p. 175
- p. 186 When the Goths threatened to sack Rome in 408, the Romans bought them off with a tribute that included three thousand pounds of pepper: Turner, *Spice*, p. 86.
- p. 186 For his wedding meal in 1468, Duke Karl of Bourgogne ordered 380 pounds of black pepper: Kipple and Ornelas (eds), *The Cambridge World History of Food*, p. 436.
- p. 186 Incidentally, the long-held idea that spices were used to mask rotting food doesn't stand up to much scrutiny: Fernández-Armesto, *Food: A History*, p. 176.
- p. 187 For centuries spices were not just the world's most valued foodstuffs, they were the most treasured commodities of any type: Bernstein, *A Splendid Exchange*, p. 110.
- p. 187 for a time he was pleased to style himself 'King of England, Scotland, Ireland, France, Puloway and Puloroon': Turner, *Spice*, p. 37.
- p. 187 Both came from a tree, *Myristica fragrans*, which was found on the lower slopes of just nine small, volcanic islands rising sheer from the Banda Sea: Turner, *Spice*, p. 28.
- p. 187 All of these spices reached Europe through a complicated network of traders, each of whom naturally took a cut: Keay, *The Spice Route*, pp. 194–9.
- p. 187 About a thousand tons of nutmeg were harvested annually, but only about a hundred tons of mace: Bernstein, *A Splendid Exchange*, p.115.
- p. 188 Though an accomplished enough mariner, he was not terribly good at a great deal else, especially geography, the skill that would seem most vital in an explorer: Keay, *The Spice Route*, pp. 185–6 and 250–51.

- p. 188 The first was actually a worthless tree bark and the second were not true peppers but chilli peppers: Bernstein, *A Splendid Exchange*, p. 167.
- p. 188 Everyone but Columbus could see that this was not the solution to the spice problem, and in 1497 Vasco da Gama, sailing for Portugal, decided to go the other way to the Orient, around the bottom of Africa: Keay, *The Spice Route*, pp. 155–64.
- p. 189 Vasco da Gama was a breathtakingly vicious man: Keay, *The Spice Route*, pp. 175–8.
- p. 189 Their provisions all but exhausted, they devised perhaps the least appetizing dish ever served: rat droppings mixed with wood shavings: Turner, *Spice*, p. 33.
- p. 189 'We ate biscuit which was no longer biscuit but powder of biscuits swarming with worms': Quoted in Boorstin, *The Discoverers*, p. 265.
- p. 190 In the Spice Islands they loaded up with 53,000 pounds of cloves, which they sold in Europe for a profit of 2,500 per cent: Freedman, *Out of the East*, p. 214.
- p. 190 Although Columbus had little idea of what he was doing, it was his voyages that ultimately proved the most important, and we can date the moment that that became so with precision: *New Yorker*, 'The Staffs of Life', 18 June 1984.
- p. 190 By the time the first Europeans arrived in the New World, farmers there were harvesting more than a hundred kinds of edible plants: Barker, *The Agricultural Revolution in Prehistory*, pp. 233–4.
- p. 191 It has been estimated that 60 per cent of all the crops grown in the world today originated in the Americas: Mann, *1491*, p. 197.
- p. 191 The indigenous people of Peru had 150 varieties of potato, and valued them all: Fernández-Armesto, *Food: A History*, p. 114.
- p. 191 The Quechuan language of Peru still has a thousand words for different types or conditions of potatoes: *Economist*, 'Llamas and mash', 1 March 2008.
- p. 191 Before the Europeans stormed into their lives, people in Central America had only five domesticated creatures – the turkey, duck, dog, bee and cochineal insect: Sokolov, *Why We Eat What We Eat*, p. 28.
- p. 192 With no immunity to many European diseases, the natives sickened easily and 'died in heapes': Mann, *1491*, p. 60.
- p. 192 An equivalent outbreak in modern New York would reduce the population to 56,000 – 'not enough to fill Yankee Stadium': Mann, *1491*, p. 109.
- p. 192 Altogether disease and slaughter reduced the native population of Mesoamerica by an estimated 90 per cent in the first century of European contact: Reader, *Cities*, p. 74.

- p. 192 When the ship was recovered in the late twentieth century, marine archaeologists were surprised to find that almost every sailor owned a tiny bag of black pepper: *British Archaeology*, 'Plucked in Her Prime', September/October 2006.
- p. 193 In 1599, eighty British merchants, exasperated by the rising cost of pepper, formed the British East India Company with a view to getting a piece of the market for themselves: Wilbur, *The East India Company and the British Empire in the Far East*, pp. 11–14.
- p. 193 This was the initiative that brought King James the treasured isles of Puloway and Puloroon, but in fact the British never had much success in the East Indies, and in 1667, in the Treaty of Breda, they ceded all claims to the region to the Dutch in return for a small piece of land of no great significance in North America. The piece of land was called Manhattan: Freedman, *Out of the East*, p. 220.
- p. 193 A century and a half later, in 1812, a Scottish historian named David Macpherson, in a dry piece of work called *History of the European Commerce with India*, quoted the tea-drinking passage from Pepys's diary: Tomalin, *Samuel Pepys*, pp. 382–3.
- p. 194 A traveller named George Sandys in 1610 grimly described coffee as being 'blacke as soot, and tasting not much unlike it: Standage, *A History of the World in Six Glasses*, p. 92.
- p. 195 the practice was to brew it in large batches, store it cold in barrels and reheat it a little at a time for serving: Standage, *A History of the World in Six Glasses*, p. 94.
- p. 195 People took to using coffee houses as their offices – as, most famously, at Lloyd's Coffee House on Lombard Street, which gradually evolved into Lloyd's insurance market: *Economist*, 'The Internet in a Cup', 20 December 2003.
- p. 195 William Hogarth's father hit on the idea of opening a coffeehouse in which only Latin would be spoken: *New Yorker*, 'Hogarth's Progress', 15 December 1997.
- p. 195 In 1696, William Pitt the Younger massively cut the tax on tea, replacing it with the dreaded window tax (on the logical presumption that it was a lot harder to hide windows than to smuggle tea) and the effect on consumption was immediate: Moxham, *Tea*, p. 27.
- pp. 195–6 Between 1699 and 1721 tea imports increased almost a hundredfold, from 13,000 pounds to 1.2 million pounds, then quadrupled again in the thirty years to 1750: Holderness, *Pre-Industrial England*, p. 209, and Dirks, *The Scandal of Empire*, p. 143.

- p. 196 and declared it interesting but not quite to their taste: Pullar, *Consuming Passions*, p. 155.
- p. 196 if their teeth didn't turn black naturally they blackened them artificially: Hart-Davis, *What the Tudors and Stuarts Did for Us*, p. 121.
- p. 196 By 1770 per capita consumption of sugar was running at 20 pounds a head: Flanders, *Consuming Passions*, pp. 58–9.
- p. 196 Britons today eat 80 pounds of sugar per person annually, while Americans pack away a decidedly robust 126 pounds of sugar per head: Freedman, *Out of the East*, p. 219, and *The Times Literary Supplement*, 'Slaves to Dough', 8 June 2007.
- p. 196 it was said that it 'assuageth the pains of the Bowels': Standage, *A History of the World in Six Glasses*, p. 123.
- p. 197 A Dutch doctor, Cornelius Bontekoe, recommended drinking fifty cups of tea a day – and in extreme cases as many as two hundred – in order to keep oneself sufficiently primed: Standage, *A History of the World in Six Glasses*, p. 123.
- p. 197 We have a narrow tendency to associate slavery exclusively with the plantation economy of the southern US, but in fact plenty of other people got rich from slavery, not least the traders who shipped 3.1 million Africans across the ocean before the trade in humans was abolished in 1807: Hyam, *Britain's Imperial Century, 1815–1914*, p. 78.
- p. 197 It had accumulated 17 million pounds of tea: Bourne, *Cradle of Violence*, p. 185.
- p. 197 broke open 342 tea chests and dumped the contents overboard: McWilliams, *A Revolution in Eating*, p. 288.
- p. 197 that name wasn't first used until 1834: Bourne, *Cradle of Violence*, p. 193.
- p. 197 The unluckiest person in all this was a British customs agent named John Malcolm: Bourne, *Cradle of Violence*, p. 142.
- p. 198 *What discontents, what dire events,/ From trifling things proceed?:* Quoted in Moxham, *Tea*, p. 49.
- p. 198 By 1800 tea was embedded in the British psyche as the national beverage, and imports were running at 23 million pounds a year: Wilbur, *The East India Company and the British Empire in the Far East*, p. 307.
- p. 198 Opium was a very considerable business in the nineteenth century, and not just in China: Burrows and Wallace, *Gotham*, p. 435.

- p. 198 People in Britain and America – women in particular – took a lot of opium, too, mostly in the form of medicinal paregoric and laudanum: Schlereth, *Victorian America*, p. 284.
- p. 198 Imports of opium to the United States went from 24,000 pounds in 1840 to no less than 400,000 pounds in 1872: Green, *The Light of the Home*, p. 140.
- p. 199 Franklin Delano Roosevelt's grandfather Warren Delano made much of the family's fortune by trading opium, a fact that the Roosevelt family has never exactly crowed about: Moxham, *Tea*, p. 69.
- p. 199 by 1838 Britain was selling almost five million pounds of opium to China every year: Hyam, *Britain's Imperial Century, 1815–1914*, p. 28.
- p. 199 For three years in the 1840s, Fortune travelled all around China, disguised as a native, collecting information on how tea was grown and processed: Moxham, *Tea*, pp. 110–12.
- p. 199 The precipitating event, unexpectedly enough, was the introduction of a new kind of rifle, the Enfield P53, at just about the time that tea cultivation was starting: The story of the Sepoy rebellion is well summarized in Hyam, *Britain's Imperial Century, 1815–1914*, pp. 134–40.
- p. 201 The dining room didn't acquire its modern meaning until the late seventeenth century and didn't become general in houses until even later: Thornton, *Seventeenth-Century Interior Decoration in England, France and Holland*, p. 282.
- p. 201 In fact, it only just made it into Samuel Johnson's dictionary of 1755: Colquhoun, *Taste*, p. 225.
- p. 201 Previously meals had been served at little tables in any convenient room: McLaughlin, *Jefferson and Monticello*, p. 368.
- .
- p. 201 For one thing, forks were now suddenly becoming common: Tunis, *Colonial Living*, p. 135.
- p. 201 The person credited with introducing the eating fork to England was Thomas Coryate: Paston-Williams, *The Art of Dining*.
- p. 201 Eating forks were thought comically dainty and unmanly: Petroski, *The Evolution of Useful Things*, pp. 9–15.
- p. 202 A lot of people hated the new practice because it meant everyone had to eat everything in the same order and at the same pace: Pullar, *Consuming Passions*, p. 196.
- p. 202 A diner at a formal gathering might sit down to as many as nine wine glasses just for the main courses: Petroski, *The Evolution of Useful Things*, p. 144.

- pp. 202–4 At one point, a single manufacturer offered no fewer than 146 different types of flatware for the table: *New Yorker*, 'Things, Things', 18 January 1993.
- p. 204 Dining was, as one book of the period phrased it, 'the great trial': Lynes, *The Domesticated Americans*, p. 181.
- p. 204 John Jacob Astor, one of the richest men in America but not evidently the most cultivated, astounded his hosts at one dinner party by leaning over and wiping his hands on the dress of the lady sitting next to him: Churchill, *The Splendor Seekers*, p. 9.
- p. 204 One popular American guidebook, *The Laws of Etiquette; or, Short Rules and Reflections for Conduct in Society*, informed readers that they 'may wipe their lips on the table cloth, but not blow their noses with it': Lynes, *The Domesticated Americans*, p. 180.
- p. 204 Dining hours were dictated to some extent by the onerous and often preposterous obligations of making and returning social calls: Baird, *Mistress of the House*, pp. 24–5.
- p. 205 One visitor to London in 1773 noted that in a single week he was invited to dinners that started successively at 1 p.m., 3 p.m., 5 p.m. and 'half after six, dinner on table at seven': *History Today*, 'The Hours of the Georgian Day', May 1974.
- p. 205 Eighty years later when John Ruskin informed his parents that it had become his habit to dine at six in the evening, they received the news as if it marked the most dissolute recklessness: Flanders, *The Victorian House*, p. 230.
- p. 205 For a generation or so it was usual for a theatrical company to perform the first half of a play to an auditorium full of dozing servants who had no attachment to the proceedings and to perform the second half to a crowd of ill-mannered inebriates who had no idea what was going on: Kelly, *Beau Brummell*, p. 263, and *History Today*, 'The Hours of the Georgian Day', May 1974.
- p. 205 Dinner finally became an evening meal in the 1850s, influenced by Queen Victoria: Thompson, (ed.), *The Cambridge Social History of Britain 1750–1950*, vol. 2, p. 259.
- p. 205 As the distance between breakfast and dinner widened, it became necessary to create a smaller meal around the middle of the day, for which the word 'luncheon' was appropriated: Colquhoun, *Taste*, pp. 225–6.

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- p. 207 Philadelphia, Boston and even Charleston were all busier ports: Rybczynski, *City Life*, p. 99, and *American Heritage*, 'Real Estate: Where and When', November 1990.
- pp. 207–8 For farmers it was cheaper to ship their produce downriver to New Orleans . . . than it was to haul it three hundred miles overland across the mountains: Gordon, *Empire of Steel*, p. 149.
- p. 208 a canal across the state to Lake Erie: The building of the Erie Canal is discussed in *Gotham: A History of New York City to 1898* by Burrows and Wallace, pp. 429–35; *Floating West* by Russell Bourne, pp. 105–17; and *An Empire of Wealth* by John Steele Gordon, pp. 105–10. Further details are provided in three articles in *American Heritage* magazine: 'The Erie Rising', April 2001, 'Engineering the Erie Canal', Summer 1986, and 'The Erie Canal Passed This Way', October 1968. The unhappy story of Canvass White is told in 'Canvass White and Natural Cement, 1818–1834' in *The Journal of the Society of Architectural Historians*, December 1961.
- p. 208 President James Madison refused to give federal aid, at least partly motivated by a desire to keep the centre of commercial gravity further south and away from that old loyalist stronghold: Burrows and Wallace, *Gotham*, p. 430.
- p. 210 With the canal, the cost of shipping a ton of flour from Buffalo to New York City fell from \$120 a ton to \$6 a ton, and the carrying time was reduced from three weeks to just over one: *American Heritage*, 'Real Estate Where and When', November 1990.
- p. 210 in the same period, even more dazzlingly, its population went from 10,000 to well over half a million: Burrows and Wallace, *Gotham*, p. 434.
- p. 211 But in America there was no lime (or at least none found before 1690), so the colonists used dried mud: Bridenbaugh, *Early Americans*, p. 96.
- p. 211 Barely had people rebuilt when a second storm of similar intensity blew in: Bridenbaugh, *Early Americans*, p. 98.
- p. 211 When George Washington wanted to pave his loggia at Mount Vernon with simple flagstones, he had to send to England for them: Clifton-Taylor, *The Pattern of English Building*, pp. 300–301.
- p. 212 In Ohio, early settlers were astonished to find that the woods were more like English parks than primeval forests: Mann, *1491*, p. 283. One of the best short accounts of the state of American woods when Europeans first arrived can be found in *American Heritage*, 'The Woods Around Us', August 1958.
- p. 212 the average colonial house required fifteen to twenty cords of firewood a year: Bridenbaugh, *Early Americans*, pp. 117–18.
- p. 212 Highways in colonial America tended to be inordinately wide – 165 feet across was not unusual: Bridenbaugh, *Early Americans*, p. 119.

- p. 212 By 1810 barely a quarter of Connecticut's original woods remained: *American Heritage*, 'The Woods Around Us', August 1958.
- p. 212 Further west, Michigan's seemingly inexhaustible stock of white pine – 170 billion board feet of it when the first colonists arrived – shrank by 95 per cent in just a century: Gordon, *An Empire of Wealth*, p. 171.
- p. 212 a lot of American wood fuelled the Great Fire of London: Jacobs, *The Economy of Cities*, p. 172.
- p. 213 Log cabins were introduced by Scandinavian immigrants in the late eighteenth century: Davidson, *American Heritage History of Colonial America*, p. 12.
- p. 213 Where the logs locked in place at the corners, the builders could use any of several types of notch: These and other details of early American housebuilding come from Upton and Vlach (eds), *Common Places: Readings in American Vernacular Architecture*.
- p. 213 As long ago as the time of *Domesday Book*, in 1086, just 15 per cent of the English countryside was wooded: *The Times Literary Supplement*, 'Trees Company', 12 January 2007. The deforestation of Britain and its consequences are also described in *New Yorker*, 'A Green and Pleasant Land,' 28 July 1980.
- p. 213 A typical farmhouse of the fifteenth century contained the wood of 330 oak trees: Rackham, *The History of the Countryside*, p. 87, and Crossley, *Timber Building in England*, p. 2.
- p. 214 By the time of Henry VIII, nearly 200 square miles a year of forest were required to produce sufficient charcoal for the iron industry, and by the late eighteenth century the figure had grown to 540 square miles a year, or about one-seventh of the total woodland in the country: Simmons, *Global Environmental History*, p. 82.
- p. 214 They were the owners' way of showing that they could afford a scarce resource: Deetz, *In Small Things Forgotten*, p.103.
- p. 214 When the Normans came to England there wasn't a single stone house in the country: Clifton-Taylor, *The Pattern of English Building*, p.34.
- p. 214 This was slightly remarkable because just underneath nearly everyone's feet was sublime building stone thanks to the existence of a great belt of hard-wearing oolitic limestones: Clifton-Taylor, *The Pattern of English Building*, pp. 21–3.
- p. 215 Hauling a cartload of stone ten or twelve miles could easily double its cost, so medieval stone didn't travel far: Clifton-Taylor, *The Pattern of English Building*, p. 22.

- p. 215 A good-sized stone building – a Cistercian monastery, say – might require 40,000 cartloads of stone to build: Simmons, *Global Environmental History*, p. 81.
- p. 215 Bricks have been around for at least six thousand years, though in Britain they date only from Roman times, and Roman bricks were not actually very good: Clifton-Taylor, *The Pattern of English Building*, pp. 210–13.
- p. 215 Bricks began to appear in some English buildings by about 1300, but for the next two hundred years native skills were so abysmally lacking that it remained usual to bring in Dutch brickmakers and bricklayers when building a brick house: Dutton, *The English Country House*, p. 25.
- p. 216 The moats and ponds that we associate with Tudor manor houses often denote where clay was dug out to be made into brick: Brunskill and Clifton-Taylor, *English Brickwork*, p. 12.
- p. 216 So bricks in medieval and renaissance Britain had a high prestige value: Cowan, *The Master Builders*, pp. 119–20.
- p. 216 He was said to have unsuccessfully fired 150,000 bricks before finally conceding that he probably wasn't going to get the hang of it: Bax, *The English Parsonage*, p. 124.
- p. 216 Minerals in the clay give bricks their colour, and the predominance of iron in most soil types accounts for the disproportionate weighting towards red: Brunskill and Clifton-Taylor, *English Brickwork*, p. 15.
- p. 217 Flemish bond is much more popular than English not because it is stronger, but because it is more economical: Brunskill, *Brick Building in Britain*, p. 28.
- p. 217 But there were many other patterns – Chinese bond, Dearne's bond, English garden-wall bond, cross bond, rat-trap bond, monk bond, flying bond and so on: Brunskill and Clifton-Taylor, *English Brickwork*, pp. 67–70.
- p. 217 'There is something harsh in the transition' from stone to brick, mused Isaac Ware in his highly influential *Complete Body of Architecture*: Dutton, *The English Country House*, p. 72, and Brunskill and Clifton-Taylor, *English Brickwork*, p. 36.
- p. 217 Apsley House, at Hyde Park Corner in London, was built of brick but then encased in Bath stone when brick suddenly became unfashionable: Clifton-Taylor, *The Pattern of English Building*, p. 38.
- pp. 217–8 The loss of tax revenue from the American colonies after the American War of Independence, as well as the cost of paying for that war, meant that the British government urgently needed funds, and in 1784 it introduced a stiff brick tax: Plumridge and Meulenkamp, *Brickwork: Architecture and Design*, pp. 33–4.

- p. 218 *But isn't our Nash . . . a very great master?:* Quoted in Brunskill and Clifton-Taylor, *English Brickwork*, p. 43.
- p. 219 Worse, he discovered that while he was extricating himself from these legal difficulties, she had been engaged in energetic frolics with others, including one of his oldest friends, and that the two children of his marriage were not in all likelihood his: The breathtaking facts of John Nash's private life, along with much else of interest, can be found in Summerson, *The Life and Work of John Nash, Architect*.
- p. 219 No one, other than perhaps the Luftwaffe, has done more to change the look of London than John Nash did over the next thirty years: Gloag, *The English Tradition in Architecture*, pp. 195–7.
- p. 220 By 1842, Britain was using two-thirds of all the coal produced in the western world: Hobsbawm, *Industry and Empire*, p. 69.
- p. 220 In London the result was a near-impenetrable gloom through much of the year: Brimblecombe, *The Big Smoke*, pp. 48–9 and 108–15.
- p. 220 In one of the Sherlock Holmes stories Holmes has to strike a match – in daytime – to read something written on a London wall: *New Yorker*, 'The London Fog', 11 November 1961.
- p. 220 In one famous incident, seven people in a row fell into the Thames, one after the other: Brimblecombe, *The Big Smoke*, p. 123.
- p. 220 In 1854, when Joseph Paxton suggested building an eleven-mile-long 'Grand Girdle Railway' to link all the principal railway termini in London, he proposed to build it under glass, so that passengers would be insulated from London's unwholesome air: Halliday, *The Great Stink of London*, pp. 164–5.
- p. 221 During weeks of really bad fog, the number of deaths in London could easily increase by a thousand: Flanders, *The Victorian House*, p. 373.
- p. 221 Coal smoke was particularly hard on stone buildings: Brimblecombe, *The Big Smoke*, pp. 65–6.
- p. 221 At Buckingham Palace Nash employed Bath stone because he thought it would wear better; he was wrong: Clifton-Taylor, *The Pattern of English Building*, p. 75.
- p. 221 He enclosed Nash's courtyard with a new frontage built out of Caen stone. It too began to fall apart almost at once: Summerson, *The Life and Work of John Nash, Architect*, p. 182.
- p. 221 Most alarming of all were the new Houses of Parliament, where the stone began to blacken and develop shocking pits and gouges, as if raked with

- gunfire, even while the building was going up: Webster (ed.), *Stone Cleaning and the Nature, Soiling and Decay Mechanisms of Stone*, pp. 58–60.
- p. 221 a remarkable artificial stone known as Coade stone: The only comprehensive work on Eleanor Coade is the 1999 work *Mrs Coade's Stone* by Alison Kelly, which unfortunately is not always easy to find. Additional details can be found in Clifton-Taylor, *The Pattern of English Building*, pp. 367–8.
- p. 223 Most Coade stone is so resistant to weather and pollution that it looks almost brand new even after nearly two and a half centuries of exposure to the elements: Clifton-Taylor, *The Pattern of English Building*, p. 367.
- p. 224 The invention of the Hoffmann kiln (named for Friedrich Hoffmann, its German inventor) allowed bricks to be produced continuously: The special features of Friedrich Hoffmann's revolutionary kiln, and other factors that led to a resurgence in brick use in the first half of the nineteenth century, are discussed in Plumridge and Meulenkamp, *Brickwork: Architecture and Design*, pp. 45–7, and Clifton-Taylor, *The Pattern of English Building*, pp. 226–30.
- p. 224 According to one estimate, more bricks were laid in Britain in the Victorian period than in all of previous history together: Brunskill, *Brick Building in Britain*, p. 171.
- p. 225 mile after mile of 'dreary repetitious mediocrity': Quoted in Hibbert, *London: Biography of a City*, p. 186.
- p. 225 The tallest brick building ever built was the sixteen-story Monadnock Building: The early history of skyscrapers (or 'elevator buildings' as they were first known) and the particular difficulties of building in Chicago are discussed in Roth, *American Architecture*, pp. 270–75; and Burchard and Bush-Brown, *The Architecture of America*, p. 153. The technical challenges of erecting tall buildings on Chicago's porous soils are considered in *American Heritage's Invention & Technology*, 'The Rise of the Skyscraper from the Ashes of Chicago', Fall 1987; and in Rybczynski, *City Life*, p. 119. Some additional details on Burnham and Root come from the *New York Times*, 'Louis Sullivan's Chicago', 26 April 1987; and Burchard and Bush-Brown, *The Architecture of America*, pp. 152–4.
- p. 226 As a building material iron was of two types: cast iron and wrought iron: Gayle and Gayle, *Cast-Iron Architecture in America*, pp. 12–13.
- p. 226 the one place iron never caught on except incidentally was in housing: 'Just once, as far as is known, did anyone of note try to use it extensively in the construction of a house, and that was that bibulous, erratic but always interesting architectural adventurer James Wyatt', Dale, *James Wyatt*, p. 98.
- p. 227 In the following decade iron's standing suffered a further blow when a bridge over the Ashtabula River in Ohio collapsed as a passenger train crossed over it: The strengths and weaknesses of iron as a building material are discussed

in *American Heritage's Invention & Technology*, 'The Golden Age of the Iron Bridge', Fall 1994, and Bernstein, *A Splendid Exchange*, p. 326.

- p. 227 Something much stronger was needed, and that material was steel – which is just another kind of iron but with a different input of carbon: Salvadori, *Why Buildings Stand Up*, pp. 66–7.
- p. 227 In 1856, the problem was unexpectedly – and indeed improbably – solved by an English businessman who knew nothing at all of metallurgy, but loved to tinker and experiment: Weightman, *The Industrial Revolutionaries*, pp. 275–83.
- p. 228 Steel was the material the Industrial Revolution had been waiting for: Gordon, *An Empire of Wealth*, pp. 240–45.
- p. 228 many towns in America (as many as thirteen, according to one source) named themselves Bessemer or Bessemer City in his honour: Weightman, *The Industrial Revolutionaries*, p. 283.

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- p. 229 His full name was Alexandre Gustave Boenickhausen-Eiffel: Salvadori, *Why Buildings Stand Up*, p.129.
- p. 231 So the Statue of Liberty is quite a piece of work, but because all that ingenuity is underneath Liberty's gowns almost no one appreciates it: The wonders of the Statue of Liberty, and Eiffel's ingenious solutions to the many problems presented by it, are well surveyed in *American Heritage*, 'Saving the Statue', June/July 1984. A question not often considered is: who is the lady in the statue? In fact, it was modelled on Frédéric Bartholdi's mother. She was from Colmar, so Liberty is really a German.
- p. 231 a 900-foot-high guillotine: *French Review*, 'The Symbol of Paris: Writing the Eiffel Tower', May 2000.
- p. 231 Eiffel gamely insisted that his tower would have many practical applications – that it would make a terrific military lookout and that one could do useful aeronautical and meteorological experiments from its upper reaches: Salvadori, *Why Buildings Stand Up*, p. 126.
- p. 231 A group of notables that included Alexandre Dumas, Emile Zola, Paul Verlaine and Guy de Maupassant submitted a long, rather overexcited letter protesting at 'the deflowering of Paris': Luyette, *Gustave Eiffel*, pp. 174–6, and Davidson and Brooke, *Building the World*, p. 289.
- p. 232 it is an immensely complex assemblage, a fretwork of 18,000 intricately fitted parts, which only come together because of an immense amount of the very cleverest thought: Salvadori, *Why Buildings Stand Up*, pp. 129–36.

- p. 232 Eiffel's first challenge, therefore, was to devise some way to brace four immensely tall and heavy legs: Luyette, *Gustave Eiffel*, p.126, and Salvadori, *Why Buildings Stand Up*, p.135.
- p. 233 Tolerances in some places were as little as one tenth of a millimetre: Daumas, *A History of Technology and Invention*, p. 440.
- p. 233 In fact, the Eiffel Tower is pretty light at just 9,500 tons: Davidson and Bourke, *Building the World*, p. 291.
- p. 233 Until the erection of the Chrysler Building in New York in 1930, it would be the tallest structure in the world: Davidson and Bourke, *Building the World*, p. 291.
- p. 233 Although by 1889 steel was displacing iron everywhere, Eiffel rejected it because he had always worked in iron and didn't feel comfortable with steel: *American Heritage*, 'Saving the Statue', June/July 1984.
- p. 234 Exports of metal products . . . went from \$6 million to \$120 million: Gordon, *An Empire of Wealth*, p. 259.
- p. 234 Books with titles like *The American Invaders* and *The 'American Commercial Invasion' of Europe* sold briskly: *American Heritage*, 'The Age of Steel', June 2001.
- p. 234 By the early twentieth century America was producing more steel than Germany and Britain combined: *American Heritage*, 'The Age of Steel', June 2001.
- p. 234 With a value of \$1.4 billion it was worth more than all the land in the United States west of the Mississippi and twice the size of the US federal government: Gordon, *An Empire of Wealth*, p. 262.
- p. 235 Congress tried to introduce an income tax of 2 per cent on earnings over \$4,000 in 1894, but the Supreme Court ruled it unconstitutional: Vanderbilt, *Fortune's Children*, p. 266.
- p. 235 Income tax wouldn't become a regular part of American life until 1914: *American Heritage*, 'The Income Tax and How It Grew', December 1973.
- p. 235 tethered around the tables so that the guests, dressed as cowboys and cowgirls, could enjoy the novel and sublimely pointless pleasure of dining in a New York ballroom on horseback: *American Heritage*, 'The Taste of Time', April 1997.
- p. 235 On March 26, 1883, Mrs. William K. Vanderbilt broke all precedent by throwing a party that cost \$250,000: *American Heritage*, 'Time Machine', February 1983.

- pp. 235–6 William Randolph Hearst . . . acquired treasures so freely that he needed two warehouses in Brooklyn to store them all: For more on Hearst's breathtakingly acquisitive habits, see Stern, *Pride of Place*, pp. 109–16, and *New Yorker*, 'Earthly Delights', 23 March 1998.
- p. 236 when he told her that the Welsh castle he had just bought was Norman, she reportedly replied: 'Norman who?': Quoted in Cannadine, *The Pleasures of the Past*, p. 105.
- p. 236 So she married the Duke of Roxburghe instead: Mordant Crook, *The Rise of the Nouveaux Riches*, p. 302.
- p. 236 one newspaper described her as 'a badly dressed woman with a moustache': quoted in Vanderbilt, *Fortune's Children*, p. 154.
- p. 236 By the early twentieth century, 10 per cent of all British aristocratic marriages were to Americans: Cannadine, *The Decline and Fall of the British Aristocracy*, p. 347.
- p. 236 One had 137 rooms, making it one of the largest city houses ever built: Scheller, *Barons of Business*, p. 55.
- p. 237 It has been estimated that if built today the Breakers would cost half a billion dollars: Scheller, *Barons of Business*, p. 73.
- p. 237 The ostentation of these properties generated such widespread disapproval that a Senate committee for a time seriously considered introducing a law limiting how much any person could spend on a house: Vanderbilt, *Fortune's Children*, p. 266.
- .
- p. 237 He was charming and good-looking – 'the handsomest American in Paris' in the view of one observer: *American Heritage*, 'Chateau Builder to Fifth Avenue', February 1955.
- p. 237 Typical of his projects was designing the base of the Statue of Liberty – a lucrative commission, but hardly one on which to hang a reputation: *American Heritage*, 'Saving the Statue,' June/July 1984. The project itself was anything but straightforward, however. Although the French donated the statue, it was left to the United States to fund the construction of the base. This was planned to be done through donations, but hardly anybody gave, so Liberty sat in pieces in 214 crates for almost two years until Joseph Pulitzer's newspaper *The World* stepped in and raised \$100,000 to get the base completed.
- .
- p. 238 He had Hunt design for him a fifty-two-room mansion, Belcourt Castle, in which the whole of the ground floor was stables: Vanderbilt, *Fortune's Children*, p. 240.

- p. 238 a breakfast nook was adorned with a Rembrandt painting: Beebe, *The Splendor Seekers*, p. 61.
- p. 238 Two of those he flung aside were killed; a third was crippled for life. He was never charged with any offence: Vanderbilt, *Fortune's Children*, p. 329.
- p. 239 George inherited \$10 million of that, which doesn't sound a huge amount, but that's equivalent to \$300 million in modern money: Rybczinski, *A Clearing in the Distance*, p. 379.
- p. 239 He bought 130,000 acres of wooded retreat in North Carolina and engaged Richard Morris Hunt to build him something suitably comfy. The details of the building and furnishing of Biltmore are discussed in Stern, *Pride of Place*, pp. 100–101, and Scheller, *Barons of Business*, p. 73.
- p. 239 For the grounds he brought in the ageing Frederick Law Olmsted, designer of Central Park in New York, who persuaded Vanderbilt to turn much of the estate into experimental forest: Rybczinski, *A Clearing in the Distance*, p. 379.
- p. 239 The Secretary of Agriculture, J. Sterling Morton, marvelled that Vanderbilt employed more men and had a larger budget for his single forest than Morton had for an entire federal department: *American Heritage*, 'Chateau Builder to Fifth Avenue', February 1955.
- p. 241 By 1920, it has been estimated, the industries his inventions and refinements spawned were worth, in aggregate, \$21.6 billion: *American Heritage*, 'Edison: Last Days of the Wizard', October 1959.
- p. 241 Concrete was one of the most exciting products of the nineteenth century: Girouard, *The Victorian Country House*, p. 20.
- p. 241 the great dome of the Pantheon in Rome is made of concrete: Lambton, *Lucinda Lambton's A to Z of Britain*, pp. 13–14.
- p. 241 Joseph Aspdin, a humble bricklayer in Leeds, invented Portland cement: *Transactions of the Newcomen Society*, 'The Early History of Portland Cement', vol. 34, 1961–2.
- p. 242 For years, Edison was captivated by concrete's possibilities: The history of Edison's wild ambitions is fully discussed in *American Heritage's Invention & Technology*, 'Thomas Edison's Concrete Houses', Winter 1996; and in *New Yorker*, 'Concrete Jungle', 10 November 2003. Other details can be found in Israel, *Edison: A Life of Invention*, pp. 184–5 and pp. 403–41.
- p. 243 He completely failed, for instance, to see the potential of the phonograph as a medium for entertainment: *New Yorker*, profile of Thomas Edison, 4 January 1930.
- p. 243 In 1908 he confidently declared that aircraft had no future: *New Yorker*, profile of Thomas Edison, 11 January 1930.

- p. 243 ideas that mostly proved to be impractical or demonstrably harebrained: Israel, *Edison: A Life of Invention*, p. 441.
- p. 243 predicted that soon he would be able to induce mass comas in enemy troops through 'electrically charged atomizers': *New Yorker*, profile of Edison, 11 January 1930.
- p. 244 The Bell patent (No. 174,465) became the single most valuable patent ever granted: *New Yorker*, 'Sound and Silence', 13 April 1998.
- p. 244 In 1861 a German schoolteacher named Philipp Reis built a prototype device, and even called it a 'Telephon,' for which reasons Germans naturally tend to credit him with the invention: Grosvenor and Wesson, *Alexander Graham Bell*, pp. 45–7.
- p. 244 Unfortunately Reis, with Teutonic punctiliousness, had always kept his equipment impeccably shiny and clean, and so went to his grave never knowing how close he had come to producing a working instrument: *New Yorker*, 'Sound and Silence', 13 April 1998.
- p. 244 Gray actually filed something called a patent caveat – a sort of holding claim that allowed one to protect an invention that wasn't quite yet perfected – on the very day that Bell filed his own, more formal patent: Evenson, *The Telephone Patent Conspiracy of 1876*, pp. 12–16.
- p. 245 While his parents settled on a farm in Ontario, Bell took up the post of professor of vocal physiology at the recently founded Boston University: Bruce, *Bell*, pp. 73–5.
- p. 245 He was employed to give just five hours of lectures a week at a salary of \$25: Mackay, *Sounds Out of Silence*, p. 79.
- p. 245 Just over a year later, on 10 March 1876, a week to the day after Bell's twenty-ninth birthday, the most famous moment in telecommunications history occurred in a small lab at 5 Exeter Place in Boston: Mackay, *Sounds Out of Silence*, pp. 91–101.
- p. 246 During the seven years he worked for Bell, he secured sixty patents in his own name: Grosvenor and Wesson, *Alexander Graham Bell*, p. 121.
- p. 246 Displayed at the Centennial Exhibition in Philadelphia that summer, it attracted little attention: Simon, *Dark Light*, pp. 62–4.
- p. 247 By July of that year Bell had two hundred phones in operation in the city and by August the number had leapt to 1,300: Gray, *Reluctant Genius*, p. 160.
- p. 247 Phones were originally seen as providing services – weather reports, stock market news, fire alarms, musical entertainment, even lullabies to soothe restless babies: Mercer, *The Telephone*, p. 68.

- p. 247 Because it was based on so many existing technologies, and because it proved so swiftly lucrative, a stream of people and companies challenged Bell's patents or simply ignored them: Grosvenor and Wesson, *Alexander Graham Bell*, pp. 90–98.
- p. 248 By the early twentieth century Bell's telephone company, renamed American Telephone & Telegraph, was the largest corporation in America, with stock worth \$1,000 a share: *American Heritage*, 'Breaking the Connection', June/July 1985.
- p. 248 He invented a metal detector, which worked beautifully in the laboratory but gave confused results at Garfield's bedside: Gray, *Reluctant Genius*, pp. 217–21.
- p. 248 In between these pursuits he helped found the journal *Science* and the National Geographic Society, for whose magazine he wrote under the memorable nom de plume of H. A. Largelamb (an anagram of 'A. Graham Bell'): How Bell filled his retirement years is entertainingly discussed in the article 'Sound and Silence', *New Yorker*, 13 April 1998.
- p. 248 He travelled the world, read widely and took a degree in geology at MIT: Bruce, *Bell*, pp. 481–2.
- pp. 248–9 He died, contented and rich, at his winter home on Pass-Grille Key, Florida, just shy of his eighty-first birthday in 1934: The facts of Watson's later years are taken from his obituary in the *New York Times*, 15 December 1934.
- p. 249 The first is Henry Dreyfuss: *New Yorker*, 'Artist in a Factory', 29 August 1931.
- p. 249 That had already been designed in-house, in 1917, by a Bell employee, William G. Blauvelt: *American Heritage's Invention & Technology*, 'Your Evolving Phone Number', Winter 1991.
- p. 250 including a house organist, who woke him – and presumably quite a lot of the rest of Rochester – with a dawn recital on a giant Aeolian organ: Scheller, *Barons of Business*, pp. 175–6, and *New Yorker*, profile of George Eastman, 3 November 1928..
- p. 251 Rather more extreme was John M. Longyear, of Marquette, Michigan, who, upon discovering that the Duluth, Mesabi & Iron Range Railroad had won the right to lay tracks to carry iron ore right past his house, had the entire property dismantled: Beebe, *The Big Spenders*, p. 364.
- p. 251 She once spent half a million dollars taking a party of friends on a hunting trip simply to kill enough alligators to make a set of suitcases and hatboxes: Beebe, *The Big Spenders*, p. 215.
- p. 251 On another occasion, she had the whole of the ground floor of El Mirasol, her Florida home, redecorated overnight, but neglected to inform her long-suffering husband: Beebe, *The Big Spenders*, p. 362.

- p. 251 She began with Whitemarsh Hall in Philadelphia, a house so big that no two accounts ever describe it in quite the same way: Beebe, *The Big Spenders*, p. 361.
- pp. 251–2 It cost Mr. Stotesbury nearly \$1 million a year just to maintain: Maher, *Twilight of Splendor*, p. 86.
- p. 252 The architect of this last-named extravaganza was Addison Mizner, who is now almost entirely forgotten but was for a brief and glittering period perhaps the most sought-after, and certainly the most extraordinary, architect in America: The details of the life and career of Addison Mizner, and of the rise of Palm Beach as a place of fashion come principally from a series of four profiles by Alva Johnston in the *New Yorker*, collectively called 'The Palm Beach Architect', which ran from 22 November to 13 December 1952. Other details are cited separately below.
- p. 253 For a client named George S. Rasmussen Mizner forgot to include a staircase and so put an external one up on an outside wall as an afterthought: Beebe, *The Big Spenders*, p. 360.
- p. 254 Mr Stotesbury was well on his way to insolvency when, providentially, he too dropped dead of a heart attack on 16 May 1938: Maher, *Twilight of Splendor*, p. 86.
- p. 254 After her death a property developer bought El Mirasol and demolished it to put more houses on the same piece of land: *Palm Beach Daily News*, 27 May 2007.
- p. 254 Some twenty other Mizner houses in Palm Beach – the greater part of what he built in short – have since been torn down as well: A summary of the losses, and of what remained as of 1991, can be found in Johnston, *Palm Beach Houses*, pp. 121–3.

Chapter 11: The Study <heading>

- p. 255 In 1897 a young ironmonger in Leeds named James Henry Atkinson took a small piece of wood, some stiff wire and not much else, and created one of the great contraptions of history: the mousetrap: Very little has been written on Atkinson; he has no entry in the *Oxford Dictionary of National Biography*. The information here comes primarily from a publication of the Leeds Library and Information Service, 'Originating in Leeds: James Henry Atkinson and the "Little Nipper"'. .
- p. 257 No other creatures live in more environments than the two of us do: Berry (ed.), *The Biology of the House Mouse*, p. 576.
- p. 257 Mice have even been found living in a refrigerated meat locker kept permanently chilled at –10C: Berry (ed.), *The Biology of the House Mouse*, p. 579.

- p. 257 a normal-sized adult can squeeze through an opening just ten millimetres (or three-eighths of an inch) wide: Berry (ed.), *The Biology of the House Mouse*, p. 582.
- p. 257 A typical litter consists of six to eight offspring: Berry (ed.), *The Biology of the House Mouse*, pp. 400–401.
- p. 257 In one famous outbreak in 1917, the town of Lascelles, in western Victoria, was literally overrun with mice after an unusually warm winter: *New Yorker*, 'The Staffs of Life', 17 December 1984.
- p. 258 Mice and other rodents consume about a tenth of America's annual grain crop – an astonishing proportion: 'Rats in Urban America', Association of Schools of Public Health publication, January 1969.
- p. 258 Each mouse voids about fifty pellets a day: Berry (ed.), *The Biology of the House Mouse*, p. 578.
- p. 258 Hantavirus, a family of respiratory and renal disorders that are always disagreeable and often lethal, is particularly associated with mice and their droppings: The National Center for Infectious Diseases at the US Centers for Disease Control and Prevention provide a good summary of hantavirus and other animal-borne diseases online: www.cdc.gov/ncidod/diseases/hanta
- p. 258 Almost everything that could be said of mice applies equally, but with multiples, to their cousins the rats: For general information on rats, see Sullivan, *Rats*.
- p. 259 'The high protein content that characterizes the more affluent neighbourhoods is particularly enticing,' James M. Clinton, a US health official, wrote some years ago in a public health report that remains one of the most compelling, if unnerving, surveys ever taken of the behaviour of domestic rats: The report, called 'Rats in Urban America', was published by the Association of Schools of Public Health in January 1969.
- p. 260 Poisons are often designed around the curious fact that rats cannot regurgitate: Catherine G. McDavid and Eric W. Mood, 'Biological Aspects of Urban Rat Control', *HSMHA Health Reports*, January 1972.
- p. 260 At the former Gansevoort poultry market in Greenwich Village, New York, pest control authorities could not understand how rats were stealing eggs without breaking them, so one night an exterminator sat in hiding to watch: *New Yorker*, '32 Rats from Casablanca', 29 April 1944.
- p. 261 The annual mortality rate is 95 per cent: Catherine G. McDavid and Eric W. Mood, 'Biological Aspects of Urban Rat Control', *HSMHA Health Reports*, January 1972.
- p. 261 They spend up to twenty hours a day asleep, normally emerging to look for food just after sunset: Catherine G. McDavid and Eric W. Mood, 'Biological Aspects of Urban Rat Control', *HSMHA Health Reports*, January 1972.

- p. 261 Fleas much prefer the blood of furry creatures to the blood of humans, and generally turn to us only when nothing better is available: Alcabes, *Dread*, p. 23.
- p. 262 No rat bones from the seventh century have been found anywhere in Britain – and people have looked hard: The mysteries of the seventh-century plague outbreak in Britain are well surveyed by Lester D. Little in *Plague and the End of Antiquity*. The facts here come from pp. 180–86.
- p. 262 It has been suggested that some outbreaks attributed to plague may not have been plague at all, but ergotism, a fungal disease of grain: Macinnis, *The Killer Beans of Calabar*, pp. 217–18.
- p. 262 Even just a generation or two ago, rats numbers in urban areas may have been considerably higher than now: *New Yorker*, ‘32 Rats from Casablanca’, 29 April 1944.
- p. 263 It is commonly written that there is one rat for every human being in a typical city, but studies have shown that to be an exaggeration: Sullivan, *Rats*, p. 20.
- p. 263 Your bed alone, if it is averagely clean, averagely old, averagely dimensioned and turned averagely often (which is to say almost never), is likely to be home to some two million tiny bed mites, too small to be seen with the naked eye but unquestionably there: ‘What’s Bugging You?’, report from the UK Medical Entomology Centre, Royston, Hertfordshire.
- p. 263 Clambering among the bed mites, on a much more gigantic scale, might also these days be lice, for it appears that these once-nearly-vanquished creatures are making a comeback: *Pesticide Outlook*, ‘Head Lice’, June 2001.
- p. 264 They evolved sometime in the last 50,000 years from head lice: Weisman, *The World Without Us*, p. 235.
- p. 264 Even when beds weren’t actively infested, it was routine to take them apart at least once a year and paint them with disinfectant or varnish as a precaution: All mattress fillings made a happy refuge for *cimex lectularius*, as the little blood suckers are formally known: Harris, *Going to Bed*, p. 45.
- p. 264 For most of the twentieth century they were virtually extinct in most of Europe and America thanks to the rise of modern insecticides, but in recent years they have been vigorously rebounding: *National Geographic News*, ‘Bloodthirsty Bedbugs Stage Comeback in U.S., Europe’, 13 May 2004.
- p. 265 ‘Some of the best hotels in New York have them’: *New York Times*, ‘Just Try to Sleep Tight. The Bedbugs Are Back’, 27 November 2005.
- p. 265 An insect named *Niptus hololeucus* has been found living in cayenne pepper and in the cork stoppers of cyanide bottles: Cloudsley-Thompson, *Spiders, Scorpions, Centipedes and Mites*, pp. 200–201.

- p. 265 Move down to the next level of living things, to the world of microbes, and the numbers swell beyond counting: Bakalar, *Where the Germs Are*, pp. 18–21.
- pp. 265–6 Dr. Gerba established some years ago that household germs are not always most numerous where you would expect them to be: *New York Times*, 'On Germ Patrol, at the Kitchen Sink', 28 August 2007. The work of Professor Gerba is also discussed in 'Dr. Germ', in the University of Arizona magazine *Alumnus*, Winter 2005.
- p. 266 the filthiest object was the kitchen wash cloth: Bakalar, *Where the Germs Are*, p. 19.
- p. 266 an enterprising middle-school student in Florida compared the quality of water in the toilets at her local fast food restaurants with the quality of the ice in the soft drinks, and found that in 70 per cent of outlets she surveyed the toilet water was cleaner than the ice: *The Week*, 'Good Week for Home Cooking', 3 March 2006.
- p. 266 As late as 1947, a medical correspondent for the *New Yorker* could write: 'Mites are only infrequently found in this country and until recently were practically unknown in New York City': *New Yorker*, 'A Reporter at Large', 30 August 1947.
- p. 267 Hardly anybody likes bats, which is truly unfortunate because bats do much more good than harm: I am obliged to the British charity the Bat Conservation Trust for a wealth of information on bats and their value to society.
- p. 267 In the Second World War, the American military invested a great deal of time and money in an extraordinary plan to arm bats with tiny incendiary bombs: *American Heritage*, 'Bats Away', April/May 1982.
- p. 268 A rather less hare-brained, but ultimately no more successful plan to make use of bats was conceived by a Dr Charles A. R. Campbell of Tulane University Medical School: *American Heritage*, 'More Bats', June/July 1982.
- p. 269 After four days of unutterable distress, the woman slipped into a coma and died: *New Yorker*, 'Annals of Medicine: The Incurable Wound', 6 April 1957.
- p. 271 Never has that been more true than in 1873, when farmers in the western United States and across the plains of Canada experienced a devastating visitation unlike anything anyone had ever seen before: The story of the plague of locusts in western North America in the 1870s comes from several sources: *Conservation in Practice*, book review of *Locust* by J. A. Lockwood (2003); *High Country News*, 'The Death of the Super Hopper', 3 February 2003; *American Heritage*, 'Pharaoh Had It Easy', October 1960; *The Times Literary Supplement*, 'Plague on the Prairie', 21 December 2004; and Sutherland, *The Expansion of Everyday Life, 1860–1876*, pp. 214–16.

Chapter 12: The Garden <heading>

- p. 274 She ordered the diversion of the little River Westbourne in London to make a large pond in the middle of Hyde Park: The story of the creation and significance of the Serpentine in Hyde Park is wonderfully recounted in an article by Molly Panter-Downes in the *New Yorker*, 'The Long Green Puddle', 25 August 1962.
- p. 275 Where exactly this man of dashing genius came from has always been a mystery: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, pp. 38–9.
- p. 275 Yet for the thirty years after he came on the scene he was everywhere that gardening of a high order was needed: Lees-Milne, *Earls of Creation*, pp. 141–5, and Lasdun, *The English Park*, p. 89.
- p. 277 paths were filled with coloured gravel, statues were brightly painted, bedding plants were chosen for the intensity of their hues: Richardson, *The Arcadian Friends*, p. 16.
- p. 277 Practically without exception they returned home full of enthusiasm for the formal orders of the classical world and a burning desire to reproduce them in an English setting: Salmon, *Building on Ruins*, pp. 19–29.
- p. 278 At Castle Howard, almost the first thing he did was rotate the house ninety degrees on its axis: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 40.
- p. 278 To maximize important prospects, Vanbrugh introduced another inspired feature – the folly: Richardson, *The Arcadian Friends*, pp. 87–8.
- p. 279 After completing the work, the earl went for a stroll around his newly reconfigured grounds, but failed to recall where the old village well had been, fell into it, and drowned: Miles, *The Tribes of Britain*, p. 359.
- p. 279 'A Man might make a pretty Landskip of his own Possessions': Quoted in Richardson, *The Arcadian Friends*, p. 106.
- p. 280 All across the country rich landowners packed their grounds with grottoes, temples, prospect towers, artificial ruins . . . nymphaeum: *Journal of the Society of Architectural Historians*, 'English Neo-Classical Architecture', December 1992.
- p. 280 Until the nineteenth century it was sumptuously gilded and covered with painted dragons – eighty in all – and tinkling brass bells, but these were sold off by King George IV to pay down his debts: Royal Botanic Gardens information sheet, 'The Pagoda at Kew'.

- p. 280 At one time the grounds of Kew had nineteen other fantasy structures scattered about: Richardson, *The Arcadian Friends*, p. 470.
- pp. 280–81 At Painshill in Surrey, one man signed a contract to live seven years in picturesque seclusion: Elliott, *The Transplanted Gardener*, p. 174.
- p. 281 Meanwhile, Charles Bridgeman and his successors were extensively reworking whole landscapes: Lasdun, *The English Park*, p. 89.
- p. 282 possibly looking for a better climate for his asthma: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 55.
- p. 282 Brown found himself in charge of a staff of forty, serving as paymaster as well as head gardener: Stroud, *Capability Brown*, p. 51.
- p. 282 He moved to Hammersmith, then a village west of London, and embarked on a freelance career: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 57.
- p. 282 To make the Grecian Valley at Stowe his workmen took away, in barrows, 23,500 cubic yards of soil and rock and scattered it elsewhere: Stroud, *Capability Brown*, p. 52, and Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 80.
- p. 283 To aid the former, he devised a wheeled machine that could move trees up to thirty-six feet high without harming them – a piece of horticultural engineering that was seen as almost miraculous: Elliott, *The Transplanted Gardener*, pp. 185–6.
- p. 283 Long before anyone else thought of doing so, he used native trees almost exclusively: *Garden History*, 'The Englishness of Lancelot "Capability" Brown', Winter 2003.
- p. 283 Brown created landscapes that were in a sense 'more English' than the countryside they replaced: Lasdun, *The English Park*, p. 95.
- p. 283 He called it 'place-making': Rybczynski, *A Clearing in the Distance*, p. 182.
- p. 283 It was said that an hour's brisk tour of an estate was all it took for him to form a comprehensive scheme for improvements: *Garden History*, 'The Englishness of Lancelot "Capability" Brown', Winter 2003.
- p. 283 A big part of the appeal of Brown's approach was that it was cheap in the long run: Lasdun, *The English Park*, p. 82.
- p. 283 Manicured grounds with their parterres and topiary and miles of clipped hedges needed a lot of maintenance: Lasdun, *The English Park*, p. 82.

- p. 284 [Brown] understood drainage better than perhaps any other architect of his time thanks to his work in landscaping: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 58.
- p. 284 Brown was once offered £1,000 to do an estate in Ireland, but declined, saying that he hadn't done all of England yet: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 78.
- p. 284 In his three decades of self-employment he undertook some 170 commissions, and so transformed a great part of the English countryside: Rybczinski, *A Clearing in the Distance*, p. 180. Many of his commissions have since been lost, alas. According to the *Guardian* (27 November 2003), about one in seven of Capability Brown's parks is now a golf course.
- p. 284 The poet Richard Owen Cambridge once declared to Brown: 'I very earnestly wish I may die before you, Mr Brown': Quoted in Clark, *The English Landscape Garden*, p. 26.
- p. 284 'It is not beauty because it is not nature,' he declared: Quoted in Lasdun, *The English Park*, p. 97.
- p. 284 One, Lord Exeter, hung a portrait of Brown in his house where he could see it every day: Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 59.
- p. 285 'which has every charm except your dear company, which will ever be the sincere and the principal delight, my dear Bidy, of your affectionate husband': Turner, *Capability Brown and the Eighteenth-Century English Landscape*, p. 65.
- p. 285 En route the party stopped at the Bay o' Skail in Orkney, and Banks did some excavating there, but overlooked the grassy knoll that covered Skara Brae, and so just missed the chance to add one of the great archaeological discoveries of the age to his many other accomplishments: Renfrew, *The Prehistory of Orkney*, p. 2.
- p. 286 Joseph Paxton dispatched two men to North America to see what they could find; both drowned when their heavily laden boat overturned on a foaming river in British Columbia: Chadwick, *The Works of Sir Joseph Paxton*, p. 23.
- p. 286 it was already occupied by a wild bull, which proceeded to trample him to death: Uglow, *A Little History of British Gardening*, p. 188.
- p. 286 Perhaps the most notable – and on the face of it most unlikely – in this category were the young friends Alfred Russel Wallace and Henry Walter Bates: The story of their adventures and privations in South America and Asia is succinctly recounted in *New Yorker*, 'Grand', 22 August 1988.
- p. 288 A small monkey puzzle tree, a decorative conifer discovered in Chile in 1782, could by the 1840s easily fetch £5: Picard, *Victorian London*, p. 177.

- p. 288 More spacious properties allowed – indeed, all but required – the new breed of suburbanites to take an interest in gardening: Horn, *Pleasures and Pastimes in Victorian Britain*, p. 35.
- pp. 288–9 The catalyst was a woman named Jane Webb who had no background in gardening, and whose improbable fame was as the author of a potboiler in three volumes called *The Mummy! A Tale of the Twenty-second Century*: Uglow, *A Little History of British Gardening*, pp. 211–12.
- p. 289 His right arm, for instance, had to be amputated as a result of a bad bout of rheumatic fever: Elliott, *The Transplanted Gardener*, p. 114.
- p. 290 ‘The operation of digging, as performed by a gardener, consists of thrusting the iron part of the spade . . . and turn it over’: Mrs Loudon, *Practical Instructions in Gardening for Ladies*, p. 305.
- p. 291 In the middle of the nineteenth century, London had just 218 acres of burial grounds: Hibbert, *London*, p. 187.
- p. 291 When the poet William Blake died in 1827, he was buried, at Bunhill Fields, on top of three others; later, four more were placed on top of him: *New Yorker*, ‘Piper Pipe That Song Again’, 27 May 1996.
- p. 291 It held seventy thousand bodies in an area about the size of a modern bowling green: Morley, *Death, Heaven and the Victorians*, p. 35.
- p. 291 ‘Mr Burstall having unlocked the ponderous oak door of the vault No. 3 . . . we threw the light of our bull’s eye lantern into the vault, and then I beheld a sight I shall never forget’: Quoted in Johnson, *St Martin-in-the-Fields*, p. 36.
- p. 291 In consequence the whereabouts of the mortal remains of quite a number of worthies . . . are today quite unknown: Johnson, *St Martin-in-the-Fields*, pp. 29–31.
- p. 292 At the Enon Baptist Chapel on Clement’s Lane in Holborn (now the site of the campus of the London School of Economics), the church authorities managed to cram a colossal twelve thousand bodies in the cellar in just nineteen years: Morley, *Death, Heaven and the Victorians*, p. 38.
- p. 292 Bodies were buried in such shallow and cursory graves that often they were exposed by scavenging animals or rose spontaneously to the surface: Curl, *The Victorian Celebration of Death*, p. 39.
- p. 292 He knew of one man who failed to observe the usual precautions and was felled instantly – ‘as if struck with a cannon-ball’: Morley, *Death, Heaven and the Victorians*, p. 35.
- p. 292 Till late in the century, the medical journal the *Lancet* ran occasional reports on people overcome by bad air while visiting graveyards: Morley, *Death, Heaven and the Victorians*, p. 99.

- p. 293 they were mostly built on heavy clay soils, which didn't drain well and thus promoted festering and stagnation: Curl, *The Victorian Celebration of Death*, pp. 124–6.
- p. 293 Loudon designed three of these new model cemeteries and made them practically indistinguishable from parks: Curl, *The Victorian Celebration of Death*, pp. 124–6.
- p. 293 Cemeteries became, improbably, de facto parks: Schlereth, *Victorian America*, p. 292.
- p. 293 Railway workers knew it affectionately as the 'Stiffs Express': Wolmar, *Fire & Steam*, p. 143.
- pp. 293–4 In the year that Loudon died, an entirely new phenomenon – the municipal park – opened at Birkenhead, across the River Mersey from Liverpool: Newton, *Design on the Land*, pp. 227–32.
- p. 294 Only people of fashion and rank (plus a smattering of impudently bold courtesans from time to time) were allowed into the big London parks until well into the nineteenth century: Lasdun, *The English Park*, p. 149.
- p. 294 There was a 'tacit understanding,' as it is always termed, that parks were not for people of the lower or even middle classes, however those rankings were defined: Kelly, *Beau Brummell*, p. 216.
- p. 294 Many of the new industrial cities had almost no parks anyway, so most working people had nowhere to go for fresh air: Lasdun, *The English Park*, pp. 149–51.
- p. 294 This was an age in which people were routinely transported to Australia for poaching, and any form of trespass, however innocent or slight, was bound to be regarded as nefarious: Waller, *The Real Oliver Twist*, p. 113.
- p. 295 The quality of landscape design 'had here reached a perfection that I had never before dreamed of', he recalled: Olmsted, *Walks and Talks of an American Farmer in England*, p. 135. The story of Olmsted's life is fully recounted in Rybczynski, *A Clearing in the Distance*. Olmsted's revelatory experience at Birkenhead can be found on pp. 93–4.
- p. 295 At just this moment, the city of New York was about to begin converting 840 acres of hayfields and scrubland into the long-awaited Central Park: Newton, *Design on the Land*, p. 267.
- p. 295 It was an enormous site, stretching nearly 2.5 miles from top to bottom and half a mile across: Rybczynski, *A Clearing in the Distance*, p. 166.

- p. 295 For one thing, in those days it wasn't actually central at all: *American Heritage*, 'The Central Park', April/May 1981.
- p. 296 A prize of \$2,000 awaited the winning entry and Olmsted needed the money: *American Heritage*, 'The Central Park', April/May 1981.
- p. 296 He teamed up with a young British architect, only recently arrived in America, named Calvert Vaux and submitted a plan: Newton, *Design on the Land*, pp. 267–89.
- p. 296 'This also had the advantage of allowing the park to be closed at night without interrupting traffic': Rybczynski, *A Clearing in the Distance*, p. 167.
- pp. 296–7 Over twenty thousand barrels of dynamite were needed to reconfigure the terrain to Olmsted and Vaux's specifications, and over half a million cubic yards of fresh topsoil had to be brought in to make the earth rich enough for planting: Newton, *Design on the Land*, p. 273.
- p. 297 'The Mall is oriented toward nothing much and goes nowhere in particular': *New Yorker*, 'Olmsted's Trip', 31 March 1997.
- p. 297 At Franklin Park in Boston he had baseball playing banned, along with all other 'active recreations', as he disdainfully called them: *Journal of the Society of Architectural Historians*, 'Of Greater Lasting Consequence', December 1988.
- p. 298 Though Central Park is his most famous creation, many think Prospect Park in Brooklyn his masterpiece: Newton, *Design on the Land*, p. 275.
- p. 298 He spent the last five years of his life at the McLean Asylum in Belmont, Massachusetts, where, it almost goes without saying, he had designed the grounds: Rybczynski, *A Clearing in the Distance*, pp. 406–11.
- p. 298 In the summer of 1863 a keen gardener in Hammersmith, west London, found a prize vine in his greenhouse sickening: The story of the phylloxera infestation is well surveyed in Ordish, *The Great Wine Blight*.
- p. 300 While showing off his acquisition at a New York restaurant in 1989, William Sokolin, a wine merchant, accidentally knocked the bottle against the side of a serving cart and it broke: Barr, *Drink: A Social History of America*, pp. 86–7.
- p. 301 A survey of farmers in the 1830s showed that the fertilizers in use at that time included sawdust, feathers, sea sand, hay, dead fish, oyster shells, woollen rags, ashes, horn shavings, coal tar, chalk, gypsum and cotton seeds, among other products: Russell, *A History of Agricultural Science in Great Britain*, pp. 90–91.
- p. 301 Then in the 1830s there suddenly came the miracle product the world had been waiting for: guano: Russell, *A History of Agricultural Science in Great Britain*, pp. 96–101.

- p. 301 A dressing of guano re-energized fields and increased crop yields by up to 300 per cent: This and most of the other facts here not otherwise credited are from Skaggs, *The Great Guano Rush*, which can fairly be called the last word on the subject.
- p. 302 Guano worked because it was packed with nitrogen, phosphorous and potassium nitrate – which coincidentally were also vital ingredients in gunpowder: *American Heritage Invention and Technology*, 'Does Guano Drive History?', Spring 2000.
- p. 302 The uric acid in guano was also much valued by dyemakers: Weightman, *The Industrial Revolutionaries*, p. 374.
- p. 302 Some Pacific islands were essentially nothing *but* guano: Bentley, *The Undercover Scientist*, p. 41.
- p. 302 For thirty years Peru earned practically all its foreign exchange from bagging up and selling bird droppings to a grateful world: *American Heritage Invention and Technology*, 'Does Guano Drive History?', Spring 2000.
- p. 302 It killed the market in human waste: Halliday, *The Great Stink of London*, p. 41.
- p. 302 It was just at this point that a curious figure named John Bennet Lawes steps into the story: Lawes and his contribution to the science of fertilization is most fully discussed in Russell, *A History of Agricultural Science in Britain*, pp. 90–145.
- p. 304 That was the option chosen for Central Park in New York, which until the end of the nineteenth century was home to a roaming flock of two hundred sheep superintended by a shepherd who lived in the building that is now the Tavern-on-the-Green: *New Yorker*, 'Grass on Manhattan', 13 September 1941.
- p. 304 The lawnmower was the invention of one Edwin Beard Budding, a foreman in a cloth factory in Stroud, Gloucestershire, who in 1830, while staring at a machine used to trim cloth, hit on the idea of turning the cutting mechanism on its side, putting it into a smaller contraption with wheels and a handle and using it to cut grass: The history of the lawnmower and of many other details pertaining to the development of the modern lawn is engagingly told in Fort, *The Grass Is Greener*. Other details come from Elliott, *The Transplanted Gardener*.
- p. 305 For one thing, it was a way of announcing to the world that the householder was prosperous enough that he didn't need to use the space to grow vegetables for his dinner table: *Garden History*, 'The Englishness of Lancelot "Capability" Brown', Winter 2003.
- p. 306 In the western United States about 60 per cent of all the water that comes out of taps for all purposes is sprinkled on lawns: This and other facts about US lawns are from *New Yorker*, 'The Grassman', 19 August 1996.

Chapter 13: The Plum Room <heading>

- p. 308 Nineteenth-century pattern books offered homeowners an almost infinite array of shapely, esoterically named motifs – ovolos, ogees, quirks, crockets, scotias, cavettos, dentils, evolute spirals, even a ‘Lesbian cymatium’, and at least two hundred more: These are generously discussed, with illustrated examples, in Parissien, *The Georgian House*, pp. 133–7, and Parissien, *Palladian Style*, pp. 154–60. Further details can be found in *Eighteenth-Century Studies*, ‘British Rococo as Social and Political Style’, Spring 1990; Guinness and Sadler, *The Palladian Style in England, Ireland and America*; and Wilkinson, *The Shock of the New*, p. 117.
- p. 308 For these buildings were the templates from which other important buildings all over the western world were derived: Rybczynski, *The Perfect House*, pp. 89–92.
- p. 309 There he befriended an influential aristocrat, Giangiorgio Trissino: The name is also commonly spelled Gian Giorgio.
- p. 309 He brought him into his home, had him schooled in mathematics and geometry, took him to Rome to see the great buildings of antiquity, and put before him every other possible advantage: Boucher, *Palladio*, pp. 18–30.
- p. 310 allowed him, in the phrase of Witold Rybczynski, to understand the *how* of a building as much as the *what*: Rybczynski, *The Perfect House*, p. 11.
- p. 310 Of the missing thirteen villas, four were never finished, seven were destroyed, one was never built, and one is missing and unaccounted for: Rybczynski, *The Perfect House*, p. xv.
- p. 310 What made him valuable to history was the accidental fact that some of his writings survived: McEwen, *Vitruvius*, pp. 1–2.
- p. 310 A lone copy of Vitruvius’s text on architecture was found on a shelf at a monastery in Switzerland in 1415: Parissien, *Palladian Style*, p. 38.
- p. 311 ‘The height of all oblong rooms should be calculated by adding together their measured length and width, taking one half of this total, and using the result for the height’: Vitruvius (trans. Morgan), *The Ten Books of Architecture*, pp. 178–9.
- p. 311 In fact, however, Palladio followed his own precepts only about half the time: Rybczynski, *The Perfect House*, p. 98.
- p. 312 Called *I Quattro Libri dell’architettura* (*The Four Books of Architecture*), it is partly a book of floor plans and elevations, partly a declaration of principles, and partly a collection of practical advice: Rybczynski, *The Perfect House*, pp. 201–2.

- p. 312 He bought every Palladio drawing he could lay his hands on – some two hundred in all – learned to speak Italian, and even modelled his signature on Palladio's: Rybczynski, *The Perfect House*, pp. 120–21, and Leapman, *Inigo*, pp. 18–22.
- pp. 312–4 Because the Georgian period went on so long, various architectural refinements and elaborations arose and either fell away or prospered independently: The distinctions of terminology within the period are succinctly covered in Parissien, *The Georgian House*, pp. 12–13. For more on Palladio's influence on British architects in the eighteenth century, see Summerson, *Architecture in Britain 1530 to 1830*, pp. 189–99.
- p. 314 the overall effect over time was repetitious and just a little numbing: Gloag, *The English Tradition in Architecture*, p. 181.
- p. 314 In the autumn of 1769, on a hilltop in the piedmont of Virginia, on what was then the very edge of the civilized world, a young man began building his dream home: By far the best and most readable account of the building and long, slow restoration of Monticello is McLaughlin, *Jefferson and Monticello*. Many of the other facts and observation in this chapter, unless otherwise noted below, come from a visit I made to Monticello in the autumn of 2007.
- p. 315 Even then they ran dry on average about one year in five: McLaughlin, *Jefferson and Monticello*, p. 156.
- p. 315 Monticello is Palladio's Villa Capra, but reinterpreted, built of different materials, standing in another continent – gloriously original, but faithful to the original too: For Palladio's influence on Jefferson and other Enlightenment talents, see Rybczynski, *The Perfect House*, pp. 124–7.
- p. 315 'Palladio is the Bible,' he wrote simply: Rybczynski, *The Perfect House*, p. 127.
- p. 316 Partly this is because Monticello's service areas – the dependencies, as they were known – are built into the slope of the hill: Adams (ed.), *The Eye of Thomas Jefferson*, p. 270.
- p. 317 One feature, a pair of doors in which both opened when only one – either one – was pushed, charmed and mystified experts for a century and a half: McLaughlin, *Jefferson and Monticello*, p. 310.
- p. 318 He was an obsessive record keeper: McLaughlin, *Jefferson and Monticello*, p. 22.
- p. 319 Those who wished to browse in the library had to wait for Mr Jefferson to take them in personally: McLaughlin, *Jefferson and Monticello*, p. 23.
- p. 319 Because of financial constraints and his endless tinkering, Monticello never looked its best or even close to it: Brand, *How Buildings Learn*, p. 44.

- p. 320 'We are now living in a brick kiln,' he wrote happily at one point to a friend: Brodie, *Thomas Jefferson*, p. 284.
- p. 320 Termites began chewing up structural timbers almost as soon as they went up, and dry rot swiftly set in too: McLaughlin, *Jefferson and Monticello*, pp. 71 and 379.
- p. 320 When he returned from five years in France in 1790, he brought back a shipload of furniture and household goods – five stoves, fifty-seven chairs, assorted mirrors, sofas and candlesticks, a coffee urn that he had designed himself, clocks, linens, crockery of every description, 145 rolls of wallpaper, a supply of Argand lamps, four waffle irons and much more – enough to fill eighty-six large crates: Adams (ed.), *The Eye of Thomas Jefferson*, p. xxxiv.
- p. 320 Jefferson dressed less showily than his own household servants: *American Heritage*, 'The Wealth of Presidents', October 1966.
- p. 320 During his first term as President he spent \$7,500 – equivalent to about \$120,000 in today's money – on wine alone: *New Yorker*, 'The Jefferson Bottles', 20 January 1986, and Barr, *Drink: A Social History of America*, p. 87.
- p. 320 Even aged eighty-two and hopelessly saddled with debts, he was 'still ordering Muscat de Riversalle in 150-bottle lots', as one biographer notes with undisguised wonder: Brodie, *Thomas Jefferson*, p. 455.
- p. 320 He had to stick to a simple Doric style for the exterior columns because he could find no one with the skills to handle anything more complex: McLaughlin, *Jefferson and Monticello*, p. 289.
- p. 321 The system was enshrined in a series of laws known as the Navigation Acts, which stipulated that any product bound for the New World had either to originate in Britain or pass through it on the way there: Breen, *The Marketplace of Revolution*, p. 88.
- p. 321 By the eve of the revolution America effectively was Britain's export market. It took 80 per cent of British linen exports, 76 per cent of exported nails, 60 per cent of wrought iron and nearly half of all the glass sold abroad: McCusker and Menard, *The Economy of British America, 1607–1789*, pp. 284–6.
- p. 321 Several fairly substantial glass-making operations were set up in the 1700s, and some even prospered briefly, but by the time of the Revolution no glass was being made in the colonies: Palmer, *Glass in Early America*, pp. 6–13.
- p. 322 A typical order from George Washington (this one in 1757) gives some sense of the innumerable things Americans were unable to produce for themselves: Thane, *Potomac Squire*, pp. 22–9, and Brady, *Martha Washington*, pp. 66–7.
- p. 322 One from Washington instructed his London agent to acquire for him 'two Lyons after the Antique Lyon's in Italy': Dalzell and Dalzell, *George Washington's Mount Vernon*, p. 55.

- p. 322 Washington's letters to his London agency, Robert Cary & Co., constantly asked for items that were 'fashionable' and 'in the latest taste' or 'uniformly handsome and genteel', but his follow-up letters indicate that he only seldom felt that he had got it: Garrett, *At Home*, p. 120, and Dalzell and Dalzell, *George Washington's Mount Vernon*, pp. 54–5.
- p. 322 When the plates arrived the man discovered to his horror that the arrow had been faithfully copied on to every piece: Tunis, *Colonial Living*, 136.
- pp. 322–3 It was easy – and for many agents irresistibly tempting – to offload on to Americans clothes and furnishings that were unsold because they were no longer fashionable in England: Thane, *Potomac Squire*, p. 22.
- p. 323 A cheerful catchphrase of English factories became: 'It's good enough for America': Palmer, *Glass in Early America*, p. 7.
- p. 323 Washington wrote furiously to Cary after one consignment that many of the products supplied were 'mean in quality but not in price, for in this they excel indeed far above any I have ever had': Dalzell and Dalzell, *George Washington's Mount Vernon*, pp. 56–7.
- p. 323 Jefferson fired his own bricks – altogether some 650,000 of them – but this was a difficult business as only about half from any load were usable because the heating was so uneven in his home-built kilns: McLaughlin, *Jefferson and Monticello*, p.158.
- p. 323 Jefferson discovered to his dismay that fourteen pairs of very expensive sash windows he had ordered from England, and really quite earnestly needed, could not now reach him: Breen, *The Marketplace of Revolution*, pp. 296–7.
- p. 324 When Washington moved to Mount Vernon in 1754 after the death of his half-brother Lawrence, it was a modest farmhouse of eight rooms: *New Yorker*, 'Why Washington Slept Here', 15 February 1999.
- p. 324 Washington enjoyed one brief youthful trip to Barbados, but otherwise never left his 'Infant Woody Country', as he once called it: Dalzell and Dalzell, *George Washington's Mount Vernon*, p. 53.
- p. 324 Yet a visitor to Mount Vernon was struck by its sophistication, as if Washington had toured the great houses and gardens of Europe: *American Heritage*, 'A Visit to Mount Vernon', February 1965.
- p. 325 Had they got there, they almost certainly would have spirited off Mrs Washington and put the house and estate to the torch: Dalzell and Dalzell, *George Washington's Mount Vernon*, p. 103.
- p. 325 Indeed, it was at the very lowest point of the war, in 1777, that Mount Vernon acquired its two most daring architectural features: its cupola and the open-air front porch, known as the piazza: Dalzell and Dalzell, *George Washington's Mount Vernon*, p. 109.

- p. 325 'To this day . . . it is one of the nicest places in America to just sit': Brand, *How Buildings Learn*, p. 38.
- p. 325 'The piazza is a really ingenious way of keeping the house shaded and cool and keeping the frontage attractive,' Dennis Pogue, associate director for preservation at Mount Vernon, told me when I was there: My visit to Mount Vernon was on 1 November 2007, and provided many of the incidental details mentioned here.
- p. 326 A shocked visitor in 1815 recorded that nearly all the chairs were worn through and had pieces of stuffing sticking out of them: McLaughlin, *Jefferson and Monticello*, p. 365.
- p. 326 When Jefferson died. . . he had debts of more than \$100,000 – a colossal sum: McLaughlin, *Jefferson and Monticello*, pp. 377–80.
- p. 327 In 1836, just ten years after Jefferson died, Monticello was bought for \$2,500 – a paltry sum for such a house even then – by an improbable figure named Uriah Phillips Levy: The story of Monticello's fate after Thomas Jefferson's death is told succinctly and well in *American Heritage*, 'The Levys of Monticello', February/March 1978.
- p. 328 Probably no other single building in America has been more widely copied: *New Yorker*, 'Why Washington Slept Here', 15 February 1999
- p. 329 About a quarter were in foreign languages, 'which cannot be read', the delegation noted grimly, while a good many more were of an 'immoral and irreligious nature': *American Heritage*, 'Jefferson and the Book Burners', August 1958.
- p. 329 Thirty-six years after the Jefferson library was purchased, early on a Christmas Eve morning, one of the chimneys in the Capitol library caught fire: McLaughlin, *Jefferson and Monticello*, p. 289.

Chapter 14: The Stairs <heading>

- p. 331 We now come to the most dangerous part of the house – in fact, one of the most hazardous environments anywhere: the stairs: Statistics and conclusions concerning stair falls generally are taken from Templer, *The Staircase*, but additional facts, particularly with respect to British falls, come from 'Falls on Stairways – Literature Review', published by the British Health and Safety Laboratory (report number HSL/2005/10), 2005.
- p. 336 In 2004, the most ancient wooden staircase yet found, dating from about three thousand years ago, was discovered a hundred metres underground in a Bronze Age salt mine at Hallstatt in Austria: *Archaeo News*, 'Europe's Oldest Wooden Staircase Found in Austria', 14 October 2004.

- p. 337 Sorting through rags was a dirty job that exposed the sorters to a range of infectious diseases: *Heritage Today*, 'What the Papers Say', November 2005.
- p. 337 Until the invention of a machine that could create continuous lengths of paper in 1802, the maximum size of each sheet was only two feet or so: This and many other interesting facts concerning the early history of wallpaper are found in Parissien, *The Georgian House*, pp. 170–75.
- p. 337 From the outset wallpaper was often coloured with pigments that used large doses of arsenic, lead and antimony, but after 1775 it was frequently soaked in an especially insidious compound called copper arsenite: Emsley, *The Elements of Murder*, pp. 119–20.
- p. 338 A particular enthusiast was the designer William Morris, who not only loved rich arsenic greens, but was on the board of directors of (and heavily invested in) a company in Devon that made arsenic-based pigments: Emsley, *The Elements of Murder*, pp. 120–21.
- p. 338 Especially when damp was present – and in English homes it seldom was not – the wallpaper gave off a peculiar musty smell that reminded many people of garlic: Emsley, *The Elements of Murder*, p. 120.
- p. 338 One such victim was Frederick Law Olmsted: Rybczynski, *A Clearing in the Distance*, p. 390.
- p. 338 Painters commonly suffered from a vague but embracing malady called painters' colic: Flanders, *The Victorian House*, p. 153, and Owen, *The Walls Around Us*, pp. 26–8.
- p. 339 Today lead paint is banned almost everywhere except for certain very specific applications, but it is much missed by conservators because it gave a depth of colour and a mellow air that modern paints really can't match: *Cornerstone* (the journal of the Society for the Protection of Ancient Buildings), 'Lead Paint', vol. 28, no. 3, 2007.
- p. 339 some practitioners could apply paint, some could apply distempers and some could do neither: Ayres, *Domestic Interiors*, pp. 126–8.
- p. 339 Distemper was made from a mixture of chalk and glue: Parissien, *Palladian Style*, p. 174.
- p. 339 Oil paints were a more complex proposition: Ayres, *Domestic Interiors*, p. 128.
- p. 339 'like spreading tar with a broom': Quoted in Owen, *The Walls Around Us*, p. 29.
- p. 340 Turpentine also gave paint a matt finish, and this became a fashionable look by the late eighteenth century: Parissien, *Palladian Style*, p. 172.

- p. 340 Linseed oil was the magical ingredient: *American Heritage's Invention & Technology*, 'Paint without Pain', Spring 2002.
- p. 340 it did have the practical benefit of acting as a disinfectant: Ayres, *Domestic Interiors*, p. 139.
- p. 340 painters ground their own pigments and mixed their own paints: Ayres, *Domestic Interiors*, p. 129.
- p. 340 Generally, at least five coats were needed to cover a wall: *American Heritage's Invention & Technology*, 'Paint without Pain', Spring 2002.
- pp. 340–41 Smalt, a shade of blue made with ground glass which gave a glittery effect, and azurite, made from a semi-precious stone, were dearer still: *Heritage Today*, 'Peeling Back the Layers', September 2004.
- p. 341 it made 'the delicatest Grass-green in the world': Quoted in Parissien, *Palladian Style*, p. 173.
- pp. 341–2 It became fashionable . . .to have as many as seven or eight colours in a single room: *American Heritage's Invention & Technology*, 'Paint without Pain', Spring 2002.
- p. 342 The brightest white available was a rather dull off-white: Parissien, *Palladian Style*, p. 172.
- p. 342 it wasn't until the 1940s, with the addition of titanium dioxide to paints, that really strong, lasting whites became available: Owen, *The Walls Around Us*, p. 29.
- p. 342 The absence of a good white paint would have been doubly noticeable in early New England, for the Puritans not only had no white paint, but didn't believe in painting anyway: *American Heritage's Invention & Technology*, 'Paint without Pain', Spring 2002.
- p. 342 Also missing from the painter's palette was a strong black: Clifton-Taylor, *The Pattern of English Building*, p. 324.

Chapter 15: The Bedroom <heading>

- p. 343 'The water given out in respiration,' explained Shirley Forster Murphy in *Our Homes, and How to Make Them Healthy* (1883), 'is loaded with animal impurities': Quoted in Green, *The Light of the Home*, p. 133.
- p. 344 'being impregnated with the poisonous substances which have escaped through the pores of the skin': Quoted in Green, *The Light of the Home*, pp. 133–4.

- p. 344 A typical feather bed contained forty pounds of feathers: Garrett, *At Home*, p. 110.
- p. 344 Spring mattresses were invented in 1865, but didn't work reliably at first because the coils would sometimes turn, confronting the occupant with the very real danger of being punctured by his own bed: *American Heritage's Invention & Technology*, 'The Mattress', Winter 2006.
- p. 344 A popular American book of the nineteenth century, *Goodholme's Cyclopedia*, divided mattress types into ten levels of comfort: Lynes, *The Domesticated Americans*, p. 207.
- p. 345 An American named Eliza Ann Summers reported in 1867 how she and her sister took armloads of shoes to bed each night to throw at the rats that ran across the floor: Garrett, *At Home*, p. 205.
- p. 345 complained of the 'Unclean, fulsom Excrement' of feathers: Quoted in Harris, *Going to Bed*, p. 6.
- p. 345 Historically, the most basic common filling was straw: Ayres, *Domestic Interiors*, p. 183.
- p. 346 In poorer homes, cow dung was sometimes hung from the bedpost in the belief that it deterred moths: Ekirch, *At Day's Close*, p. 175.
- p. 346 A visitor to upstate New York in the 1790s reported how his hosts, in a well-meaning stab at fumigation, filled his room with smoke just before bedtime, leaving him to grope his way through a choking fog to his bed: Garrett, *At Home*, p. 202.
- p. 346 In William Shakespeare's day, for instance, a decent canopied bed cost £5, half the annual salary of a typical schoolmaster: Author interview with Paul Edmondson and Stanley Wells of the Shakespeare Birthplace Trust, Stratford-upon-Avon, November 2009.
- p. 347 Even at home, it was entirely usual for a servant to sleep at the foot of his master's bed whatever his master might be up to within the bed: Picard, *Elizabeth's London*, p. 70; Flanders, *The Victorian House*, p. xxv; Rybczynski, *Home*, p. 28.
- p. 347 The records make clear that King Henry V's steward and chamberlain both were present when he bedded Catherine of Valois: Planel, *Locks and Lavatories*, p. 7.
- p. 347 Samuel Pepys's diaries show that a servant slept on the floor of his and his wife's bedroom: Rivers *et al.*, *The Name of the Room*, p. 72.

- p. 347 In such circumstances, bed curtains provided a little privacy and cut down on drafts too, but increasingly came to be seen as unhealthy refuges of dust and insects: Garrett, *At Home*, p. 114.
- p. 347 Bed curtains could be a fire hazard, too – no small consideration when everything in the bedroom, from the rush matting on the floor to the thatch overhead, was energetically combustible: Garrett, *At Home*, pp. 116–18.
- p. 347 In one of his works, John Aubrey, the seventeenth-century historian, relates an anecdote concerning the marriage of Thomas More's daughter Margaret to a man named William Roper: Reynolds, *Beds*, p. 79.
- p. 348 Mary Wood-Allen in the popular and influential *What a Young Woman Ought to Know* assured her young readers that it was permissible to take part in physical intimacies within marriage, so long as it was done 'without a particle of sexual desire': Green, *The Light of the Home*, p. 132.
- p. 348 Partners were advised not to have intercourse unless they were 'in full sympathy' with each other: Bourke, *Fear*, pp. 85–6.
- p. 348 In 1865, John Ruskin opined in an essay that women should be educated just enough to make themselves practically useful to their spouses, but no further: Flanders, *The Victorian House*, p. 53.
- p. 348 Even the American Catherine Beecher, who was by the standards of the age a radical feminist, argued passionately that women should be accorded full and equal educational rights, so long as it was recognized that they would need extra time to do their hair: Carson, *The Polite Americans*, p. 145.
- p. 349 Monthly intercourse was recommended as a safe maximum: Green, *The Light of the Home*, p. 132.
- p. 349 'poor creeping tremulous, pale, spindle-shanked, wretched creatures who crawl upon the earth': Quoted in Porter, *Flesh in the Age of Reason*, p. 234.
- p. 349 'Every act of self-pollution is an earthquake – a blast – a deadly paralytic stroke,' declared [one expert]: *Horizon*, 'The Victorians Unbuttoned', Autumn 1969.
- p. 349 A medical man named Samuel Tissot described how one of his patients drooled continuously, dripped watery blood from his nose and 'defecated in his bed without noticing it': Roach, *Bonk*, p. 148.
- p. 349 The most thorough analysis of sexual hazards, not to mention most comprehensive title, was provided by Sir William Acton in *The Functions and Disorders of the Reproductive Organs . . . Relations*: *Horizon*, 'The Victorians Unbuttoned', Autumn 1969.

- p. 349 He was also responsible for the oft-quoted assertion: 'I should say that the majority of women are not very much troubled with sexual feeling of any kind': Pullar, *Consuming Passions*, p. 184.
- p. 349 the Penile Pricking Ring . . . was lined with metal prongs that bit into any penis that impiously swelled beyond a very small range of permissible deviation: Roach, *Bonk*, pp. 148–9.
- pp. 349–50 Other devices used electrical currents to jerk the subject into a startled but penitent wakefulness: Simon, *Dark Light*, p. 157.
- p. 351 Ruskin confessed to her, as she later related, that 'he had imagined women were quite different to what he saw I was and that the reason he did not make me his Wife was because he was disgusted with my person the first evening': *Horizon*, 'The Victorians Unbuttoned', Autumn 1969, and Hunt, *Building Jerusalem*, p. 117.
- p. 351 Ruskin never overcame his prudish ways or gave any indication of desiring to: *Horizon*, 'The Victorians Unbuttoned', Autumn 1969
- p. 351 nineteenth-century divorce acts, like everything else to do with marriage, were overwhelmingly biased in favour of men: Langford, *A Polite and Commercial People*, pp. 582–3.
- pp. 351–2 A woman, however, had to prove that her spouse had compounded his infidelity by committing incest, bestiality or some other dark and inexcusable transgression drawn from a very small list: Picard, *Victorian London*, pp. 323–4.
- p. 352 Until 1857, a divorcee forfeited all her property and generally she lost the children too: *New Yorker*, 'Little People', 18 August 2003.
- p. 352 In one well-known case, a woman named Martha Robinson was for years beaten and physically misused by a cruel and unstable husband: Brown, *The Pox*, p. 48.
- p. 352 The development of breasts, womb and other reproductive apparatus 'drained energy from the finite supply each individual possessed', in the words of one authority: Green, *The Light of the Home*, p. 116.
- pp. 352–3 the doctor ordered a series of stringent emergency measures, which included cold baths and enemas, the removal of all stimulus, including spicy foods and the reading of light fiction, and the thorough scouring of her vagina with borax: *New Yorker*, 'Sex and Sensibility', 18 September 2000.
- p. 353 'Romance-reading by young girls will, by this excitement of the bodily organs, tend to create their premature development, and the child becomes physically a woman months or even years before she should': Quoted in Green, *The Light of the Home*, p. 118.

- p. 353 a man who took his wife to have her eyes tested was told that the problem was a prolapsed womb and that until she had a hysterectomy her vision would remain impaired: Flanders, *The Victorian House*, p. 319.
- p. 353 One American physician in 1852 cited it as a source of pride that 'women prefer to suffer the extremity of danger and pain rather than waive those scruples of delicacy which prevent their maladies from being fully explored': Tannahill, *Sex in History*, p. 336.
- p. 353 thus passing on their inferiorities to their daughters: Green, *The Light of the Home*, p. 122.
- p. 353 the celebrated case of Mary Toft: *New Yorker*, 'Hogarth's Progress', 15 December 1997. The name is sometimes also given as Tofts, as in Gelis, *History of Childbirth*, pp. 260–61, where the story is also recounted.
- p. 354 whether a menstruating woman's touch could spoil a ham: Tannahill, *Sex in History*, p. 336.
- p. 354 a change in coloration around the vagina soon after conception was a useful indicator of pregnancy: Flanders, *The Victorian House*, p. 15.
- p. 354 expelled from the American Medical Association for allowing his students to observe a woman – with her permission – give birth: Roach, *Bonk*, pp. 13–14.
- p. 356 Symptoms vary, but every one of them is horrible: Syphilis in all its awful manifestations is comprehensively considered by Kevin Brown in *The Pox*.
- p. 357 One method was to bleed the patient to the point of faintness. Another was to inject an infusion of tobacco into the rectum: *American Heritage*, 'Gentlemen, This Is No Humbug', August/September 1979.
- p. 357 When Samuel Pepys underwent a lithotomy – the removal of a kidney stone – in 1658 the surgeon took just fifty seconds to get in and find and extract a stone about the size of a tennis ball: Picard, *Restoration London*, pp. 88–9.
- p. 357 In 1806, the novelist Fanny Burney, while living in Paris, suffered a pain in her right breast, which gradually grew so severe that she could not lift her arm: The background to Burney's ordeal is fully and harrowingly detailed in Chisholm, *Fanny Burney*, pp. 212–16. The actual diary entry itself can be found in *The Journals and Letters of Fanny Burney (Madame d'Arblay)*, vol. 6, from the Clarendon Press, pp. 596–614. The full horror of Burney's ordeal was curiously underplayed for a very long time by her biographers. L. B. Seeley, in a well-regarded book of 1890, *Fanny Burney and Her Friends*, gave it just one sentence: 'In 1811, she had a dangerous illness, and was operated upon by the famous surgeon, Baron de Larrey, for a supposed cancer' (p. 313).

- p. 359 Gouverneur Morris, one of the signatories of the Declaration of Independence, killed himself by forcing a whalebone up his penis to try to clear a urinary blockage: Burrows and Wallace, *Gotham*, p. 428.
- p. 359 When President James A. Garfield was shot in 1881, it wasn't the bullet that killed him but doctors sticking their unwashed fingers in the wound: Gray, *Reluctant Genius*, p. 221.
- p. 360 Death rolls from Boston in the same period show people dying from such unexpected causes as 'drinking cold water', 'stagnation of the fluids', 'nervous fevers' and 'fright': Forbes, *Paul Revere and the World He Lived In*, p. 39.
- p. 360 In the fifteenth and sixteenth centuries, the average marriage lasted just ten years before one or the other of the partners expired: Watts, *Epidemics and History*, p. 135.
- p. 360 It is often assumed that because people died young they also married young in order to make the most of the short life that lay in front of them. In fact, that seems not to be so: Laslett, *The World We Have Lost*, p. 103.
- p. 361 In the 1960s, the Stanford historian Peter Laslett did a careful study of British marriage records: Laslett, *The World We Have Lost*, pp. 85–6.
- p. 361 they remarried more often and more quickly after bereavement: Laslett, *The World We Have Lost*, p. 103.
- p. 361 After her beloved Prince Albert died in December 1861, the clocks in his bedroom were stopped at the minute of his death, 10.50 pm, but at the queen's behest his room continued to be serviced as if he were merely temporarily absent rather than permanently interred in a mausoleum across the grounds: *New Yorker*, 'Noted in "Balmorality"', 11 August 1997.
- p. 362 Every possible permutation of relationship was considered and ruled upon: The dizzying specifics of Victorian mourning are summarized in Morley, *Death, Heaven and the Victorians*, pp. 65–9.
- p. 363 The lid was lifted and Miss Markham cried out: 'My God, you are burying me alive!': Cited in Bourke, *Fear*, pp. 34–5.
- p. 363 he reported coming upon three coffins that he believed showed clear evidence of internal agitation: Curl, *The Victorian Celebration of Death*, p. 123.
- p. 363 'discovered in a corner of the vault in a sitting posture': Lovill, *Ringling Church Bells to Ward Off Thunderstorms and Other Curiosities from the Original Notes and Queries*, p. 57.
- p. 364 Others directed that their heads be cut off or their hearts removed before burial: Bourke, *Fear*, pp. 33–42.

- p. 364 One author proposed the construction of 'Waiting Mortuaries': Curl, *The Victorian Celebration of Death*, p. 123.
- p. 364 and several of these tests were actually incorporated into medical schools' curricula: Bourke, *Fear*, p. 43.
- p. 364 Grave robbery in consequence became an irresistibly tempting business: Curl, *The Victorian Celebration of Death*, pp. 39–41.
- pp. 364–5 At a time when a well-paid working man might earn a pound in a week, a fresh corpse could fetch eight or ten pounds and sometimes as much as twenty: Wise, *The Italian Boy*, pp. 30–34.
- p. 365 To thwart robbers, the poor in particular often held on to the bodies of departed loved ones until they had begun to putrefy and so had lost their value: Curl, *The Victorian Celebration of Death*, p. 120.
- p. 366 Sir Henry Thompson, founder of the Cremation Society of England, demonstrated the efficacy of his ovens by cremating a horse at Woking in 1874: This and other details of the early cremation movement are discussed in Curl, *The Victorian Celebration of Death*, pp. 181–6 and 374–5.
- p. 367 The movement also wasn't helped by the fact that one of its principal proponents was essentially mad: Curl, *The Victorian Celebration of Death*, pp. 184–5.
- p. 367 it wasn't formally legalized in Britain until 1902: Jupp and Gittings, *Death in England*, p. 249.

Chapter 16: The Bathroom <heading>

- p. 368 It would not be easy to find a statement on hygiene more wrong, or at least more incomplete, than this one by the celebrated architectural critic Lewis Mumford in his classic work *The City in History*, published in 1961: quoted in Melosi, *Garbage in the Cities*, pp. 4–5.
- pp. 368–9 A home of 4,500 years ago from the Indus Valley, at a place called Mahenjo-Daro, had a nifty system of rubbish chutes to get waste out of the living area and into a midden: Melosi, *Garbage in the Cities*, p. 5.
- p. 369 The Minoans had running water, bathtubs and other civilizing comforts well over 3,500 years ago: Wright, *Clean and Decent*, pp. 5–7.
- p. 369 'gymnasium' means 'the naked place': Ashenburg, *The Dirt on Clean*, p. 24.
- p. 369 'It was common, when meeting a man, to ask where he bathed': Ashenburg, *The Dirt on Clean*, p. 37.

- p. 370 There is quite a lot we don't know about Romans and their bathing habits – whether slaves bathed with free citizens, or how often lengthily people bathed or with what degree of enthusiasm: DeLaine and Johnston (eds.), *Roman Baths and Bathing*, pp. 27–33.
- p. 370 When St Thomas à Becket died in 1170, those who laid him out noted approvingly that his undergarments were 'seething with lice': Busvine, *Insects and Hygiene*, p. 11.
- p. 370 All the best minds agreed that bathing opened the epidermal pores and encouraged deathly vapours to invade the body: Ashenburg, *The Dirt on Clean*, p. 100.
- p. 371 The most notorious was plague (which was really two diseases: bubonic plague, named for the swollen buboes that victims got in the neck, groin or armpit, and the even more lethal and infectious pneumonic plague, which overwhelmed the respiratory system), but there were many others: Simmons, *An Environmental History of Great Britain from 10,000 Years Ago to the Present*, p. 15.
- p. 371 It was followed in the 1550s by another strange fever – 'the new sickness' – which 'raged horribly throughout the realm and killed an exceeding great number of all sorts of men, but especially gentlemen and men of great wealth', as one contemporary noted: Youngs, *Sixteenth Century England*, p. 147.
- p. 371 A curious aspect of ergotism is that it came with a cough very like a dog's bark, which is thought to be the source of the expression 'barking mad': Macinnis, *The Killer Beans of Calabar*, pp. 217–18.
- p. 371 Until the eighteenth century when vaccination came in, smallpox killed 400,000 people a year in Europe west of Russia: Glynn and Glynn, *The Life and Death of Smallpox*, pp. 94–101.
- p. 372 Her friend Lady Mary Sidney, who nursed her, was not so lucky. 'I left her a full fair lady,' wrote her husband, '. . . and when I returned I found her as foul a lady as the smallpox could make her': Quoted in Glynn and Glynn, *The Life and Death of Smallpox*, p. 4.
- p. 372 The Duchess of Richmond, who modelled for the figure of Britannia on the English penny, was similarly disfigured a century later: Glynn and Glynn, *The Life and Death of Smallpox*, p. 38.
- p. 372 The release of pus led to the belief that the body was trying to rid itself of poisons, so smallpox victims were vigorously bled, purged, lanced and sweated: Glynn and Glynn, *The Life and Death of Smallpox*, pp. 22 and 25.
- p. 372 'Wash your hands often, your feet seldom, and your head never': quoted in Cockayne, *Hubbub*, p. 59.

- p. 373 Queen Elizabeth, in a much-cited quote, faithfully bathed once a month 'whether she needs it or no': Wright, *Clean and Decent*, p. 75.
- p. 373 In 1653, John Evelyn, the diarist, noted a tentative decision to wash his hair annually: Tomalin, *Samuel Pepys*, p. 5.
- p. 373 Pepys mentions his wife's bathing only once in the diary he kept for nine and a half years: Wright, *Clean and Decent*, p. 68.
- p. 373 'Methinks it cannot be clean to go so many bodies together in the same water,' Pepys noted in the summer of 1668: Pepys, *Diary*, 13 June 1668.
- p. 373 Nothing, however, bemused the Indians more than the European habit of blowing their noses into a fine handkerchief, folding it carefully and placing it back in their pockets as if it were a treasured memento: Mann, *1491*, p. 50.
- p. 373 an observer of the court of King James I noted that the king never went near water except to daub his fingertips with a moist napkin: Leapman, Inigo, p. 64.
- pp. 373–4 But even Boswell was left in awe by his contemporary the Marquis d'Argens, who wore the same undershirt for so many years that when at last he was persuaded to take it off, it had so fixed itself upon him 'that pieces of his skin came away with it': Ashenburg, *The Dirt on Clean*, p. 127.
- p. 374 'What would you say if you saw my feet?': Quoted in Ashenburg, *The Dirt on Clean*, p. 127.
- p. 374 When Henry Drinker, a prominent Philadelphian, installed a shower in his garden as late as 1798, his wife Elizabeth put off trying it out for over a year: Ekirch, *At Day's Close*, p. 166.
- p. 374 By the eighteenth century the most reliable way to get a bath was to be insane: Wright, *Clean and Decent*, p. 137.
- p. 374 His theory was that plunging a body into chilly water produced a sensation of 'Terror and Surprize' which invigorated dulled and jaded senses: Ashenburg, *The Dirt on Clean*, p. 129.
- p. 374 This can't have got him any cleaner, but it seems to have done him no harm and it must at least have given the neighbours something to talk about: *American Heritage*, 'Franklin's Last Home', April 2006.
- p. 374 'they 'washed' by changing their shirts': Ashenburg, *The Dirt on Clean*, p. 12. The point is also made in Cieraad, *At Home*, p. 119.
- p. 374 But then suddenly water became fashionable, though still only in a medicinal sense: Langford, *A Polite and Commercial People*, p. 102.

- p. 374 In 1702 Queen Anne went to Bath for treatment of her gout, which boosted its curative reputation and prestige very considerably: Walvin, *Beside the Seaside*, p. 15.
- p. 375 Scarborough on the Yorkshire coast guaranteed that its waters provided a balm against 'Apoplexy, Epilepsie, Catalepsie, Vertigo, Jaunders, Hypochondriack Melancholy and Windiness': Walvin, *Beside the Seaside*, p. 17.
- p. 375 The most celebrated pioneer of water cures was Dr Richard Russell, who in 1750 wrote, in Latin, a book on the curative properties of seawater, translated four years later as *A Dissertation Concerning the Use of Sea-Water in Diseases of the Glands*: Langford, *A Polite and Commercial People*, pp. 103–7.
- p. 375 The real outrage came when the poorer elements started to turn up, and often stripped off on the beach 'in promiscuous numbers' and then shuffled into the water for what was, for most of them, effectively their one bath of the year: Marsden, *The English at the Seaside*, p. 23.
- p. 375 Brighton's future was permanently assured when in September 1783, just as the American Revolution ended with the signing of the Treaty of Paris, the Prince of Wales visited the resort for the first time: Walvin, *Beside the Seaside*, p. 20.
- p. 376 'They thought it very strange, that a man seemingly consumptive should plunge into the sea': Quoted in Ashenburg, *The Dirt on Clean*, p. 137.
- p. 377 He titled one lecture 'How to Live for Many Weeks, Months or Years Without Eating Anything Whatever', and in another he guaranteed his listeners a healthful life to the age of 150: Eden and Carrington, *The Philosophy of the Bed*, p. 61.
- p. 377 In one graphic demonstration, a doctor showed how a horse, painted all over in tar, grew swiftly enfeebled and piteously expired: Wright, *Clean and Decent*, p. 165.
- p. 377 When John Wesley, the founder of Methodism, coined the phrase 'Cleanliness is next to Godliness' in a sermon in 1778, he meant clean clothes, not a clean body: Ashenburg, *The Dirt on Clean*, p. 131.
- p. 378 When the young Karl Marx went off to college in the 1830s, his fretting mother gave him strict instructions regarding hygiene and particularly enjoined him to have 'a weekly scrub with sponge and soap': Wheen, *Karl Marx*, p. 12.
- p. 378 Even so, as late as 1861 an English doctor could write a book called *Baths and How to Take Them*: Ashenburg, *The Dirt on Clean*, p. 164.
- p. 378 Francis Kilvert noted with pleasure how jagged ice clung to the side of his bath and pricked his skin as he merrily bathed on Christmas morning in 1870: Bax, *The English Parsonage*, p. 169.

- p. 378 One early type of shower was so ferocious that users had to don protective headgear before stepping in: Wright, *Clean and Decent*, p. 158.
- p. 378 Perhaps no word in English has undergone more transformations in its lifetime than 'toilet': Joy, *Getting Dressed*, p. 13.
- p. 379 The Romans were particularly attached to the combining of evacuation and conversation: Carter, *Flushed*, pp. 34–5.
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- p. 379 Charles II always took two attendants with him when he went into the lavatory: Hibbert, *The Court at Windsor*, pp. 65–6.
- p. 379 Giacomo Casanova, the Italian adventurer, remarked on a visit to London how frequently he saw someone 'ease his sluices' in full public view: Picard, *Johnson's London*, p. 266.
- p. 379 At Monticello, Thomas Jefferson installed three indoor privies – probably the first in America – which incorporated air vents to take the odour away. By Jeffersonian standards (or actually any standards) they weren't technologically advanced: the waste simply fell into a collecting pot, which was emptied by slaves: McLaughlin, *Jefferson and Monticello*, p. 195.
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- p. 380 When he insisted upon being provided with something in which to do his business, his bemused host brought him a kettle: Garrett, *At Home*, pp. 134–5.
- p. 380 One that had been around for centuries was that in France there was 'much pissing in chimnies': Hibbert, *Elizabeth I*, p. 131.
- p. 380 The French were also commonly accused of relieving themselves on staircases: Girouard, *Life in the French Country House*, p. 221.
- p. 381 It was the boast of Versailles that it had one hundred bathrooms and three hundred commodes: Rybczynski, *Home*, p. 41.
- p. 381 'Going down into my cellar . . . I put my foot into a great heap of turds': Quoted in Picard, *Restoration London*, p.15, and Rivers *et al*, *The Name of the Room*, p. 94.
- p. 381 The *Gentleman's Magazine* in 1753 related the case of one nightsoil man who went into a privy vault in a London tavern and was overcome almost at once by the foul air: The story is related in Ekirch, *At Day's Close*, pp. 165–6.
- p. 381 Crowding in many London districts was almost unimaginable: See Hibbert, *London*, p. 188; Inwood, *A History of London*, p. 523; and Ashenburg, *The Dirt on Clean*, p. 171.

- p. 382 Bricks had been stacked like stepping stones: Halliday, *The Great Stink of London*, p. 40.
- p. 382 one street, housing 176 families, had not been cleaned for 15 years: Wright, *Clean and Decent*, p. 144.
- p. 382 In Liverpool, as many as one-sixth of the populace lived in dark cellars: Melosi, *Garbage in the Cities*, p. 10.
- p. 382 In London, the Thames absorbed anything that wasn't wanted: condemned meat, offal, dead cats and dogs, food waste, industrial waste, human faeces and much more: see Hibbert, *London*, p. 187.
- p. 382 The river was a perpetual 'flood of liquid manure': Hunt, *Building Jerusalem*, p. 22.
- p. 383 'all the drugs, minerals and poisons, used in mechanics and manufacture, enriched with the putrefying carcasses of beasts and men; and mixed with the scourings of all the wash-tubs, kennels, and common sewers': quoted in Cockayne, *Hubbub*, p. 202.
- p. 383 The Thames grew so noxious that when a tunnel being dug at Rotherhithe sprang a leak the first matter through the breach was not river water but concentrated gases, which were ignited by the miners' lamps, putting them in the absurdly desperate position of trying to outrun incoming waters and clouds of burning air: *New Yorker*, 'The Great Iron Ship', 19 September 1953.
- p. 383 The River Fleet was in 1831 'almost motionless with solidifying filth': Wise, *The Italian Boy*, p. 10.
- p. 383 Even the Serpentine in Hyde Park became so progressively putrid that park users stayed upwind of it: Hibbert, *London*, p. 96.
- p. 383 In the 1860s, a layer of sewage fifteen feet deep was dredged from the bottom: *New Yorker*, 'The Long Green Puddle', 25 August 1962.
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- p. 383 The very first was built by John Harington, godson to Queen Elizabeth: Dutton, *The English Country House*, p. 38.
- p. 383 Joseph Bramah, a cabinetmaker and locksmith, patented the first modern flush toilet in 1778: Halliday, *The Great Stink of London*, pp. 42–3.
- p. 383 This problem was resolved by one of the great and surely most extraordinarily appropriate names in history, that of Thomas Crapper: Picard, *Victorian London*, p. 65.
- p. 384 Toshers made a good living, all things considered, but it was dangerous: Picard, *Victorian London*, p. 104.
- p. 384 Typhoid fever alone killed 1,500 people or more a year from 1850 to 1870: Schneer, *The Thames*, p. 146.

pp. 384–5 Whooping cough killed about 10,000 children a year from 1840 to 1910. Measles killed even more: Crompton, *Workhouse Children*, p. 90.

p. 385 most were by nature ‘improvident, reckless and intemperate, and with habitual avidity for sensual gratification’, as one government report crisply summarized it: Vinten-Johansen *et al*, *Cholera, Chloroform, and the Science of Medicine*, p. 352, and Picard, *Victorian London*, p. 235.

p. 385 ‘The facile character of the Irishman, his crudity, which places him but little above the savage, his contempt for all humane enjoyments, in which his very crudeness makes him incapable of sharing, his filth and poverty, all favour drunkenness’: Quoted by Miles, *The Tribes of Britain*, p. 392.

p. 385 The state medical commission in New York actually declared that the disease was confined to the dissolute poor and ‘arises entirely from their habits of life’: *New Yorker*, ‘My Grandfather and the Plague’, 18 October 1947.

p. 385 The distinguishing feature of cholera was its quickness: Sutherland, *The Expansion of Everyday Life*, pp. 216–17, and Melosi, *The Sanitary City*, pp. 46–8.

p. 386 Between 1845 and 1856, over seven hundred books on cholera were published in English: Halliday, *The Great Stink of London*, p. 125.

p. 386 ‘Is it a fungus, an insect, a miasma, an electrical disturbance, a deficiency of ozone, a morbid off-scouring of the intestinal canal? We know nothing’: Quoted in Halliday, *The Great Stink of London*, pp. 125–6.

p. 386 ‘Malarious aromata rampage invisible through every street,’ wrote one chronicler, a touch colourfully, at mid-century: Quoted in Spann, *The New Metropolis*, p. 134.

p. 386 ‘By the mere action of the lungs of the inhabitants of Liverpool a stratum of air sufficient to cover the entire surface of the town to a depth of three feet is daily rendered unfit for the purposes of respiration’: Quoted in Halliday, ‘Death and Miasma in Victorian London’, *British Medical Journal*, October 2001.

p. 386 The most devoted and influential believer in miasma theory was Edwin Chadwick, a secretary of the Poor Law Commission and author of *A Report on the Sanitary Condition of the Labouring Population of Great Britain*, which became a somewhat improbable bestseller in 1842: The composition of the Poor Law Commission and Chadwick’s role in it is discussed in Rose, *The English Poor Law 1780–1930*, pp. 101–3.

p. 386 ‘All smell is disease,’ he explained to a parliamentary inquiry: Cadbury, *Seven Wonders of the Industrial World*, p. 162.

pp. 386–7 Chadwick was an intense and cheerless figure, much given to petty jealousies and arguments over position: Melosi, *The Sanitary City*, pp. 44–5.

- p. 388 almost uniquely among medical authorities he did not blame the poor for their own diseases: Vinten-Johansen *et al*, *Cholera, Chloroform, and the Science of Medicine*, p. 352.
- p. 388 The *Lancet* reported the matter as a worrying rumour and professed itself astonished: Vinten-Johansen *et al*, *Cholera, Chloroform, and the Science of Medicine*, pp. 242–3.
- p. 388 In April 1857, for instance, he killed a patient by experimenting on him with a new type of anaesthetic, amylene: Vinten-Johansen *et al*, *Cholera, Chloroform, and the Science of Medicine*, p. 369.
- p. 388 In Southwark, the rate of cholera deaths was six times higher than in neighbouring Lambeth: *British Medical Journal*, 'Death and Miasma in Victorian London', October 2001.
- p. 389 After the 1848 outbreak, Snow couldn't find a single flusherman who had died: Vinten-Johansen *et al*, *Cholera, Chloroform, and the Science of Medicine*, pp. 8–9.
- p. 389 The difference was that the hospital had its own water supply, from a well on the grounds, while people outside took their water from public wells: Picard, *Victorian London*, p. 236.
- p. 390 It turned out that the Hampstead victim was a fan of Broad Street water – she liked it so much that she had it delivered regularly to her house – and had taken a draught shortly before becoming ill: Cadbury, *Seven Wonders of the Industrial World*, p. 172.
- p. 390 In fact, the epidemic was already subsiding by the time the handle was removed: Edward R. Tufte, 'Visual and Statistical Thinking: Displays of Evidence for Making Decisions' (booklet published by Graphics Press LLC, 2005), p. 11.
- p. 390 'That is my opinion,' replied Snow: Vinten-Johansen *et al*, *Cholera, Chloroform, and the Science of Medicine*, p. 9.
- p. 390 The result was 'the Great Stink', as *The Times* dubbed it: Halliday, *The Great Stink of London*. Also, Flanders, *The Victorian House*, p. 300, and Reader, *Cities*, pp. 208–12.
- pp. 390–91 'Whoso once inhales the stink can never forget it': Quoted in Hunt, *Building Jerusalem*, p. 260.
- p. 391 Some members . . . tried to venture into the library, overlooking the river, 'but they were instantaneously driven to retreat, each man with a handkerchief to his nose': Halliday, 'Death and Miasma in Victorian London', *British Medical Journal*, October 2001.

- p. 391 he calculated that each urinal could produce £48 of income a year: Leapman, *The World for a Shilling*, pp. 91–2.
- p. 392 The tunnels required 318 million bricks, and necessitated the digging up and redistributing of 3.5 million cubic yards of earth: Hunt, *Building Jerusalem*, p. 260.
- p. 392 In the process of building the new sewer system he transformed three and a half miles of riverfront through the creation of the Chelsea, Albert and Victoria embankments: Halliday, *The Great Stink of London*, pp. 144–61.
- p. 392 Altogether he reclaimed fifty-two acres of land, over which he scattered parks and promenades: Picard, *Victorian London*, pp. 52–3.
- p. 392 There mighty outfall pipes disgorged 150 million gallons of raw, lumpy, potently malodorous sewage into the Thames each day: Cadbury, *Seven Wonders of the Industrial World*, p. 175.
- p. 394 In September 1878, a pleasure boat named the *Princess Alice*, packed to overflowing with day-trippers, was returning to London after a day at the seaside, when it collided with another ship at Barking at the very place and moment when the two giant outfall pipes surged into action: Schneer, *The Thames*, pp. 150–56; Halliday, *The Great Stink of London*, pp. 103–4; and Inwood, *A History of London*, p. 553.
- p. 394 In 1876, Robert Koch, then an unknown country doctor in Germany, identified the microbe, *Bacillus anthracis*, responsible for anthrax: Halliday, *The Great Stink of London*, p. 187.
- p. 394 One of his last and more singular proposals was to build across London a series of towers modelled on the new Eiffel Tower in Paris: Halliday, 'Death and Miasma in Victorian London', *British Medical Journal*, October 2001.
- p. 395 American communities were generally cleaner: Rybczynski, *City Life*, p. 88, and Melosi, *The Sanitary City*, pp. 19–20.
- p. 395 People who drank milk in America sometimes grew delirious and swiftly died: *American Heritage*, 'There I Grew Up', October 1966.
- pp. 395–6 A doctor who got it said it felt 'as if three or four hooks were fastened on to the globe of each eye and some person, standing behind me, was dragging them forcibly from their orbits back into the head': Quoted in Watts, *Epidemics and History*, p. 213.
- p. 396 In the 1790s, a heroic English immigrant named Benjamin Latrobe began a long campaign to clean up water supplies: *American Heritage*, 'Introducing Clean Water', Winter 1999.
- p. 396 By the 1830s, it was estimated that a hundred tons of excrement were added to the city's cesspits each day, often with contaminating effects on nearby wells: Spann, *The New Metropolis*, pp. 134–7.

- p. 397 The very first hotel in the world to offer a bath for every bedroom was the Mount Vernon Hotel in the resort community of Cape May, New Jersey: *American Heritage's Invention & Technology*, 'The Old High-Tech Hotel', Fall 1995.
- p. 397 Unfortunately – in fact, amazingly – Scott provided just four bathrooms to be shared among six hundred bedrooms: Lambton, *Vanishing Victoriana*, p. 116.
- p. 397 lacked a proper bathroom because there wasn't enough pressure in the pipes to get water upstairs: Planel, *Locks and Lavatories*, p. 23.
- p. 397 'Bathrooms are for servants,' sniffed one English aristocrat: Ashenburg, *The Dirt on Clean*, p. 178.
- p. 397 Or as the Duc de Doudeauville in France responded loftily when asked if he would be installing plumbing in his new house: 'I am not building a hotel': Girouard, *Life in the French Country House*, p. 33.
- p. 398 Bathrooms were not at first decorated any more than you would decorate a boiler room: Wright, *Clean and Decent*, pp. 224–5.
- p. 398 In the rectory at Whatfield in Suffolk the bath was simply put behind a screen in the downstairs front hall: Bax, *The English Parsonage*, p. 168.
- p. 398 Casting a one-piece bath that was neither too thick nor too heavy was a surprisingly challenging proposition: Hardyment, *From Mangle to Microwave*, pp. 98–9, and Wright, *Clean and Decent*, pp. 228–35.

Chapter 17: The Dressing Room <heading>

- p. 402 His face wears an expression that looks very like weary resignation: This and other observations concerning the display of Ötzi and his personal effects is based on a visit I made to the museum in the summer of 2008. The general story of Ötzi's discovery and scientific investigation is well told in Fowler, *Iceman*, and in *National Geographic*, June 1993. The sources for other details are cited separately below.
- p. 402 Scientists could determine many of the details of his life with startling precision: Gosnell, *Ice*, p. 337.
- p. 403 One of the canisters had contained glowing embers wrapped in maple leaves, for starting fires: Gosnell, *Ice*, p. 338.

- p. 404 Intrigued, a Czech foot and shoe expert named Vaclav Patek carefully fashioned a replica pair: *New Yorker*, 'Sole Survivor', 14 and 21 February 2005.
- .
- p. 405 among these new people was some ingenious soul who came up with one of the greatest, most underrated inventions in history: string: Barber, *Women's Work*, pp. 39–43.
- p. 406 These actions have arcane names like braking, retting, swingling (or scutching) and hackling or heckling: Barber, *Prehistoric Textiles*, pp. 12–15.
- p. 406 To make it white, it had to be bleached in sunlight, a slow process that could take months to execute: Leahy, *Anglo-Saxon Crafts*, p. 76.
- p. 406 The poorer stuff was left unbleached and made into canvas or sacking: Tunis, *Colonial Living*, pp. 48–50.
- p. 406 sheep were surprisingly unwoolly creatures: Barber, *Prehistoric Textiles*, p. 21.
- p. 407 To turn it into cloth required washing, combing, carding, teaseling, warping, sizing and fulling, among many other processes: Crowfoot, Pritchard and Staniland, *Textiles and Clothing c. 1150–c. 1450*, pp. 15–16.
- .
- p. 407 Combing the fibres flat created a hard-wearing but comparatively stiff fabric: a worsted: Barber, *Women's Work*, p. 36.
- p. 407 Silk was a rare luxury, literally worth its weight in gold: Bernstein, *A Splendid Exchange*, p. 4.
- p. 407 Most people, if they had silk at all, had it in the form of ribbons or other trim: Pipponnier and Mane, *Dress in the Middle Ages*, p. 20.
- p. 407 The Chinese ferociously guarded the secrets of silk production: Barber, *Women's Work*, p. 31.
- p. 407 Britain tried hard for a hundred years to produce silk, and sometimes got good results, but ultimately couldn't overcome the drawback of periodic harsh winters: Brooke, *English Costume of the Seventeenth Century*, p. 12.
- p. 408 Sumptuary laws were enacted partly to keep people within their class, but partly also for the good of domestic industries, since they were often designed to depress the importation of foreign materials: Youings, *Sixteenth Century England*, pp. 110–11.
- p. 408 Really enormous piccadills made eating almost impossible: Lofts, *Domestic Life in England*, p. 105.
- p. 409 He also worried, not unreasonably, that the hair of wigs might come from plague victims: Lofts, *Domestic Life in England*, p. 120.

- p. 409 Wigs might be made of almost anything – human hair, horsehair, cotton thread, goat hair, silk: Tunis, *Colonial Living*, p. 143.
- p. 409 A full wig could cost £50 and wigs were so valuable that they were left as bequests in wills: Corson, *Fashions in Hair*, p. 223.
- p. 409 a wig 'so long and full of hair that it may serve you for a hat and cloak in all weathers': Corson, *Fashions in Hair*, p. 262.
- p. 410 Very often it was actually their own hair made into a wig. People who couldn't afford wigs tried to make their hair *look* like a wig: Corson, *Fashions in Hair*, p. 224.
- p. 410 When wheat harvests failed in France in the 1770s, there were riots all over as starving people realized that diminished supplies of flour were not being baked into bread, but were being used to powder the privileged heads of aristocrats: Corson, *Fashions in Hair*, p. 276.
- p. 410 By the late eighteenth century, hair powders were commonly coloured – blue and pink were especially popular – and scented, too: Woodforde, *The History of Vanity*, pp. 95–7.
- p. 410 Lord Effingham employed five French friseurs just to look after his hair; Lord Scarborough hired six: Corson, *Fashions in Hair*, p. 280.
- p. 410 Wigmakers, in desperation, petitioned George III to make wig-wearing by males compulsory, but the king declined: Corson, *Fashions in Hair*, p. 269.
- p. 411 Female wigs sometimes rose as much as two and a half feet, making the average wearer roughly seven and a half feet tall: Woodforde, *The History of Vanity*, p. 100.
- p. 411 When travelling to engagements they often had to sit on the floor of their carriages or ride with their heads out the windows: Picard, *Johnson's London*, p. 224.
- p. 411 At least two fatalities were attributed to women's hair catching fire after brushing against chandeliers: Corson, *Fashions in Hair*, p. 343.
- p. 411 Women's hair became so complicated that it took on a whole new vocabulary, and so ornate that individual curls or sections of curl had names – *frivolité, des migraines, l'insurgent, monte la haut, sorti, frelange, flandon, burgoigne, choux, crouche, berger, confident* and many more: Brooke, *English Costume of the Seventeenth Century*, pp. 78–86..
- p. 411 Many slept with their necks on special wooden blocks to keep their hairstyles elevated and undisturbed: Tunis, *Colonial Living*, pp. 144–5.

- p. 411 One woman reportedly miscarried when she discovered that mice were nesting in her upper decks: Corson, *Fashions in Hair*, p. 343.
- p. 411 a model ship, complete with sails and cannon, riding the waves of her headwear, as if protecting it from invasion: Woodforde, *The History of Vanity*, p. 102.
- p. 413 Gradually these artificial patches took on shapes, like stars or crescent moons, which were worn on the face, neck and shoulders: Joy, *Getting Dressed*, p.14.
- p. 413 One lady is recorded as sporting a coach and six horses galloping across her cheeks: Picard, *Restoration London*, pp. 124–5.
- p. 413 Patches were worn by men as well as women, and were said to reflect one's political leanings by whether they were worn on the right cheek (Whigs) or left cheek (Tories): Joy, *Getting Dressed*, p. 14.
- p. 413 In the 1780s, just to show that creative ridiculousness really knew no bounds, it became briefly fashionable to wear fake eyebrows made of mouse skin: Woodforde, *The History of Vanity*, p. 54.
- p. 413 Ceruse had three principal drawbacks: it cracked when the wearer smiled or grimaced; after a few hours it turned grey; and if used long enough it could very well kill: Corson, *Fashions in Hair*, p. 346.
- p. 414 At least two well-known beauties, the courtesan Kitty Fisher and the socialite Maria Gunning, Countess of Coventry, are said to have died from ceruse poisoning: Joy, *Getting Dressed*, p. 28.
- p. 414 Well into the nineteenth century, many women drank a concoction called Fowler's Solution, which was really just dilute arsenic: Macinnis, *The Killer Beans of Calabar*, pp. 100–104.
- p. 414 He would arrive at the battlefield 'painted, powdered, all his eyelashes stuck together, covered with ribbons and diamonds': Mitford, *The Sun King*, p. 33.
- p. 414 Some men took to wearing high-heeled shoes: Woodforde, *The History of Vanity*, pp. 115–16.
- p. 414 Some carried parasols in the summer. Nearly all drenched themselves in perfume: Ribeiro, *Dress in Eighteenth-Century Europe*, pp. 142–3.
- p. 414 They became known as macaronis, from a dish they first encountered on Italian tours: Ribeiro, *Dress in Eighteenth-Century Europe*, p. 143.
- pp. 414–5 So it is curious that the people who actually brought some restraint to matters . . . have become associated in the popular consciousness with overdress: *New Yorker*, 'The Seriousness Gap', 7 November 1994.

- p. 415 Brummell lived in Mayfair and for some years his house was the epicentre of one of the more improbable rituals in London's history – that of a procession of grown men of great eminence arriving each afternoon to watch him dress: Kelly, *Beau Brummell*, pp. 149–58.
- p. 415 It was generally thought an amazement that he bathed every day – ‘and every part of his body’, as one witness added with special astonishment: Ashenburg, *The Dirt on Clean*, p. 156.
- p. 415 When word got out that the withered and miserly Marquess of Queensberry, who lived nearby, was also in the habit of taking milk baths, milk sales in the district plummeted: Ryley, *The Story of Baths and Bathing*, p. 152.
- p. 415 Brummell's apparel was confined almost entirely to three plain colours: white, buff and blue-black: Kelly, *Beau Brummell*, p. 2.
- p. 416 ‘Those,’ Robinson sighed, ‘are our failures’: Quoted in Kelly, *Beau Brummell*, p. 164.
- p. 416 Some of the fashion was dictated by the ever-increasing stoutness of the Prince of Wales: Kelly, *Beau Brummell*, p. 121.
- p. 416 Jane Carlyle noted in her diary, perhaps just a touch breathlessly, that the count's pantaloons were ‘skin-coloured and fitting like a glove’: Steele, *Fashion and Eroticism*, p. 57.
- pp. 416–7 Curiously, for a man famed for his appearance, we don't know what he looked like: Kelly, *Beau Brummell*, p. 242.
- pp. 417–8 India dominated the cotton trade, as we are reminded by the endless numbers of words that came into English by way of that trade: Yafa, *Cotton*, p. 26.
- p. 418 Weaving is effected by interlacing two sets of strings or fibres at right angles to form a mesh: Barber, *Women's Work*, pp. 39–41.
- p. 418 Traditionally, spinning was the work of women and weaving was the work of men: Steinbach, *Women in England*, pp. 25–6.
- p. 419 According to the story as traditionally recounted, weavers and spinners alike grew so furious with Kay that they attacked his home and he had to flee to France, where he died a pauper: See, for instance, Yafa, *Cotton*, p. 48.
- p. 419 Hargreaves produced an ingeniously simple device known as the spinning jenny, which did the work of ten spinners: Yafa, *Cotton*, pp. 43–4.
- p. 420 By 1785, thanks to Hargreaves's machine and the refined versions that followed, that figure had leapt to 16 million pounds: *Economist*, ‘A Great Yarn’, 20 December 2003.

- p. 420 He stole the rudiments of the spinning jenny from Hargreaves without hesitation or remorse (let alone compensation), wriggled out of business deals and abandoned friends and partners whenever it became safe or profitable to do so: Yafa, *Cotton*, pp. 44–6.
- p. 421 Arkwright evidently saw this coming because he built his first factory like a fortress in a remote corner of Derbyshire – already a remote county – and fortified it with cannons and even a supply of five hundred spears: Waller, *The Real Oliver Twist*, p. 97.
- p. 421 the number grew by an average of 100,000 per decade before peaking at 805,000 in 1913, by which time nearly three million were in operation throughout the world: Jenkins (ed.), *Cambridge History of Western Textiles*, p. 727.
- p. 422 The costs of feeding and clothing the slaves were far greater than the amount of usable cotton that even the most diligent hand-plucking could produce: *American Heritage*, 'King Cotton', September 1992.
- p. 422 The story as conventionally told is this: After graduating from Yale in 1793, Whitney accepted a job as a tutor to a family in South Carolina, but upon arriving discovered that the promised salary was to be halved: *American Heritage*, 'Eli Whitney: Nemesis of the South', April 1955.
- p. 423 For the use of their machine, they demanded a one-third share of any harvest: Yafa, *Cotton*, p. 82.
- p. 423 They were right about the irresistibility, but failed to note that the gin was also easily pirated: *American Heritage*, 'King Cotton', September 1992.
- p. 424 Cotton was soon the most traded commodity in the world and two-thirds of all that cotton came from there: *Economist*, 'A Great Yarn', 20 December 2003.
- p. 424 American cotton exports went from almost nothing before the invention of the cotton gin to a staggering two billion pounds by the outbreak of the Civil War: Bernstein, *A Splendid Exchange*, p. 263.
- p. 424 At its peak, Britain took 84 per cent of it all: Hyam, *Britain's Imperial Century*, p. 28.
- p. 425 The guns were to be manufactured by a new method, which came to be known as the Whitney system or American system: Boorstin, *The Americans: The National Experience*, pp. 30–34.
- p. 425 Whitney, it turns out, spent most of the eight years not working on the musket order at all, but using the money from the contract to further his efforts to gain compensation for the cotton gin: *American Heritage*, 'Eli Whitney's Other Talent', May/June 1987.

- p. 426 The idea, as one historian has noted, was 'to eliminate, as far as possible, any impression of shape': Howarth, *The Year Is 1851*, p. 103.
- p. 426 A woman could easily go about her daily business under 40 pounds of clothing: Flanders, *The Victorian House*, p. 369.
- p. 426 'One wonders how, or whether, Victorian ladies managed to traverse a properly equipped drawing room in a full crinoline without sweeping several small tables clear': Picard, *Victorian London*, p. 169.
- p. 426 'Miss Clara turned round and round like a peacock, undecided which way to make the attempt': quoted in Cunnington and Cunnington, *The History of Underclothes*, pp. 100–101.
- pp. 426–7 Lady Eleanor Stanley recorded in her diary how the Duchess of Manchester tripped going over a stile . . . and ended up exposing her tartan knickerbockers 'to the view of all the world in general and the Duc de Malakoff in particular': Cunnington and Cunnington, *The History of Underclothes*, pp. 99-100.
- p. 427 One manufacturer advertised proudly, if unnervingly, that its crinolines 'do not cause accidents, do not appear at inquests': Cunnington and Cunnington, *The History of Underclothes*, p. 105.
- p. 427 Such a regime, the magazine noted, allowed the average girl to reduce her waist size from twenty-three inches to thirteen in just two years: Cunnington and Cunnington, *The History of Underclothes*, p. 100.
- p. 427 the enduring belief that some women had ribs surgically removed to make their midsections even more compressible is, happily, a myth: Steele, *The Corset*, p. 73.
- p. 428 The *Lancet* regularly investigated the dangers of tight corsets and concluded that in at least one case the victim's heartbeats were so impeded that she died: Steele, *The Corset*, p. 67.
- p. 428 The tone of anti-corset literature for women was strikingly similar to the tone of anti-masturbation literature for men: Steele, *The Corset*, p. 77.
- p. 428 By restricting blood flow and compressing organs in the vicinity of the reproductive zone, corsets, it was feared, could lead to a tragic increase in 'amative desires' and possibly even induce involuntary 'voluptuous spasms': Green, *The Light of the Home*, p. 128.
- p. 429 Victorian rigidities were such that ladies were not even allowed to blow out candles in mixed company: Picard, *Victorian London*, p. 123.
- p. 429 They could not say that they were going 'to bed' . . . but merely that they were 'retiring': Carson, *The Polite Americans*, p. 147.

- p. 429 Women could refer among themselves to petticoats or, in hushed tones, stockings, but could mention almost nothing else that brushed bare flesh: Cunnington and Cunnington, *The History of Underclothes*, p. 76.
- p. 429 Chemical dyes – some of them quite rich and colourful – became available in mid-century and one of the first places they appeared was on underclothes: Flanders, *The Victorian House*, p. 218.
- p. 429 ‘the amount of embroidery put upon underclothing nowadays is sinful’: Quoted in Cunnington and Cunnington, *The History of Underclothes*, p. 98.
- p. 429 The word ‘brassière’, from a French word meaning ‘upper arm’, was first used in 1904 by the Charles R. DeBevoise Company: Farrell-Beck and Gau, *Uplift*, pp. 18–34.
- p. 430 It has been sometimes written that the bra was the invention of one Otto Titzling: Farrell-Beck and Gau, *Uplift*, p. 10.

Chapter 18: The Nursery <heading>

- p. 431 ‘The idea of childhood did not exist’: Ariès, *Centuries of Childhood*, p. 2. (The book was published in French in 1960 as *Enfant de la vie familiale sous l’Ancien Régime* and translated into English two years later.) Ariès’ lasting influence is well surveyed in the *New Yorker*, ‘Little People’, 18 August 2003.
- p. 431 ‘In traditional society, mothers viewed the development and happiness of infants younger than two with indifference’: Shorter, *The Making of the Modern Family*, p. 168.
- p. 432 ‘Of all the characteristics in which the medieval age differs from the modern . . . none is so striking as the comparative absence of interest in children’: quoted by Haas and Rosenthal in *Essays on Medieval Childhood*, p. 18.
- p. 432 ‘The general feeling was, and for a long time remained, that one had several children in order to keep just a few’: Ariès, *Centuries of Childhood*, p. 38.
- p. 432 The figures usually cited are that one-third of children died in their first year of life and half failed to reach their fifth birthdays: see Spann, *The New Metropolis*, pp. 134–5, and Miles, *The Tribes of Britain*, p. 391.
- p. 432 Edward Gibbon, growing up rich in healthy Putney, lost all six of his siblings in early childhood: Inwood, *A History of London*, p. 278.
- p. 432 The diarist John Evelyn and his wife had eight children and lost six of them in childhood, and were clearly heartbroken each time: Lofts, *Domestic Life in England*, pp. 128–9.

- p. 432 'hast broken me asunder and shaken me to pieces': Quoted in Fraser, *The Weaker Vessel*, p. 90.
- p. 433 Doctors, when called at all, frequently resorted to treatments that only increased the distress and danger: Cassidy, *Birth: A History*, pp. 164–5.
- pp. 433–5 draining the exhausted mother of blood (on the grounds that it would relax her – then seeing loss of consciousness as proof of success), padding her with blistering poultices or otherwise straining her dwindling reserves of energy and hope: Gelis, *History of Childbirth*, pp. 248–50.
- p. 435 If a baby died within the womb, the procedures for getting it out are really too horrible to describe: Fraser, *The Weaker Vessel*, pp. 544–6, and Gelis, *History of Childbirth*, pp. 232–45..
- p. 435 Emily Cockayne relates the sad case of a little boy who lay down in the road and covered himself with straw to amuse his friends. A passing cart squashed him: Cockayne, *Hubbub*, pp. 170–72.
- p. 436 The first person to look carefully into the matter was, a little unexpectedly, the astronomer Edmond Halley: Halley, 'An Estimate of the Degree of the Mortality of Mankind', *Philosophical Transactions of the Royal Society*, January 1692–3.
- p. 437 In the worst outbreaks, 90 per cent of victims died: Gelis, *History of Childbirth*, p. 246.
- p. 437 Until late in the nineteenth century most doctors attributed puerperal fever either to bad air or lax morals, when in fact it was their own grubby fingers transferring microbes from one tender uterus to another: Cassidy, *Birth: A History*, pp. 58–9.
- p. 438 Unfortunately their inventor, Peter Chamberlen, chose not to share his invention with the world, but kept it secret for the sake of his own practice: Fraser, *The Weaker Vessel*, p. 547.
- p. 438 The Little Boy Blue of the nursery rhyme . . . is unlikely to have been more than about four years old: Laslett, *The World We Have Lost*, p. 16.
- p. 439 Because of the heat and to save their clothes, they often worked naked: Howarth, *The Year Is 1851*, p. 30.
- p. 439 Children in the ceramics factories of the Potteries in the Midlands cleaned out pots containing residues of lead and arsenic, inducing a slow poisoning that condemned many to eventual paralysis, palsies, and seizures: Selinus, *Essentials of Medical Geology*, p. 3.
- p. 439 The least envied child workers of all were the chimney sweeps, or 'climbing boys' as they were also known: Waller, *The Real Oliver Twist*, pp. 63–5.

- p. 439 Ware's is a name that crops up regularly in architectural histories of the eighteenth century, for he was the leading building critic of the age and his opinions carried a great deal of weight: See, for instance, Gloag, *The English Tradition in Architecture*, p. 183.
- p. 440 Until well into the nineteenth century children received almost nothing in the way of legal protection. Before 1814 no law forbade the theft of a child, for instance: Cunningham, *The Children of the Poor*, p. 56.
- pp. 440–41 Elizabeth Salmon, after abducting a child named Elizabeth Impey, was charged with stealing her cap and gown because that was the only part of the offence that was illegal: Cunningham, *The Children of the Poor*, p. 56.
- p. 441 it was widely believed that gypsies stole children and sold them on, and there appears to have been some truth in that: Cunningham, *The Children of the Poor*, p. 55.
- p. 441 Some materials, like flax, had to be kept moist as they were being worked, so some of the workers were permanently drenched by spray off the machines: Steinbach, *Women in England, 1760–1914*, p. 24.
- p. 441 Some children reportedly were so tired that they hadn't the energy to eat and sometimes fell asleep with food in their mouths: Waller, *The Real Oliver Twist*, p. 109.
- p. 442 'I found [one room] occupied by one man, two women, and two children, and in it was the dead body of a poor girl who had died in childbirth a few days before': quoted in Picard, *Victorian London*, p. 91.
- p. 442 By the second half of the nineteenth century, one-third of families in England had eight or more children, another third had five to seven, and a final third (the wealthier third overwhelmingly) had four or fewer: Davin, *Growing Up Poor*, p. 16.
- p. 442 At least 15 per cent of children, it is thought, had the bowed legs and pelvic distortions of rickets: Picard, *Victorian London*, p. 233.
- p. 442 One doctor in mid-Victorian London published a list of the things he had seen tiny infants fed – jellied calves-feet, hard muffins soaked in oil, gristly meat they could not chew: Inwood, *A History of London*, p. 280.
- p. 442 By the 1860s, London had an estimated one hundred thousand 'street Arabs' who had no education, no skills, no purpose and no future: Koven, *Slumming*, p. 90.
- p. 443 'It is clearly wrong to keep ordinary children of the working-class at school after the age at which their proper work begins': Quoted in Cunningham, *The Children of the Poor*, p. 169.

- p. 443 Malthus blamed the poor for their own hardships and opposed the idea of relief for the masses on the grounds that it simply increased their tendency to idleness: See, for instance, Wood, *Poverty and the Workhouse in Victorian Britain*, pp. 58–9.
- p. 443 'Even when they have an opportunity of saving . . . they seldom exercise it for all that is beyond their present necessities goes, generally speaking, to the ale-house': Quoted in Rose, *The English Poor Law 1780–1930*, pp. 44–5.
- p. 443 [Malthus] believed, as he wrote to a friend in 1817, that 'a great part of the population should be swept from the soil': Quoted in Kenneally, *The Great Shame and the Triumph of the Irish in the English-Speaking World*, p. 105.
- p. 443 In Dudley, in the Midlands, the average life expectancy at birth at mid-century had sunk to just 18.5 years, a lifespan not seen in Britain since the Bronze Age: Hobsbawm, *Industry and Empire*, p. 72.
- p. 444 Some were reasonably generous, but others were so cheap that they were known to carry sick people or women in labour into another parish so that they became another jurisdiction's responsibility: Waller, *The Real Oliver Twist*, pp. 29–30.
- p. 444 'Jane Sotworth of Wrightington, spinster, swears that Richard Garstange of Fazerkerley, husbandman, is the father of Alice, her bastard daughter': Laslett, *The World We Have Lost*, p. 140.
- p. 445 'I remember the case of a family named Wintle: Chadwick, *Report from His Majesty's Commissioners for Inquiring into the Administration and Practical Operation of the Poor Laws*, p. 93.
- p. 446 'Poor relief had become so generously available, the commissioners believed, that 'it appears to the pauper that the Government has undertaken to repeal, in his favour, the ordinary laws of nature': Chadwick, *Report from His Majesty's Commissioners for Inquiring into the Administration and Practical Operation of the Poor Laws*, p. 59.
- p. 446 With a zeal that came perilously close to paranoia, the report went on to suggest that a poor working man might wilfully choose to 'revenge himself on the parish' by marrying and producing children to 'increase that local overpopulation which is gradually eating away the fund out of which he and all the other labourers of the parish are to be maintained': Chadwick, *Report from His Majesty's Commissioners for Inquiring into the Administration and Practical Operation of the Poor Laws*, p. 86.
- p. 446 To make sure that the poor were never rewarded for their idleness, the new workhouses were made as strict and joyless as possible: For details of workhouse life and conditions, see Wood, *Poverty and the Workhouse in Victorian Britain*, pp. 58–70 and 99–101.

- p. 446 'On no account must the diet be superior or equal to the ordinary mode of subsistence of the labouring classes of the neighbourhood': Wood, *Poverty and the Workhouse in Victorian Britain*, pp. 100–101.
- p. 446 At Poplar Workhouse in east London male inmates were required to pick five and a half pounds of oakum per day – a quota nearly twice that imposed on prison convicts: Wood, *Poverty and the Workhouse in Victorian Britain*, p. 147.
- p. 447 At Andover Workhouse in Hampshire, where inmates were made to crush bones for fertilizer, they were said to be so permanently famished that they sucked the bones to get at the marrow: Marston, *Sir Edwin Chadwick*, p. 63.
- p. 447 Measles killed more children in the nineteenth century than any other illness: Crompton: *Workhouse Children*, p. 90.
- p. 447 One vague and chronic malady – now thought to have been a combination of skin infections – was simply called 'the itch': Crompton, *Workhouse Children*, p. 92.
- p. 447 One user proudly testified that he had brought forth three hundred worms, 'some of them of Uncommon Thickness': Cockayne, *Hubbub*, p. 56.
- pp. 447–8 At one workhouse in the Midlands, a boy named Henry Cartwright was deemed so malodorous that the matron ordered him thrust into a solution of sulphuret of potash in an attempt to eliminate his body odour: Crompton, *Workhouse Children*, p. 94.
- p. 448 At Brentwood, Essex, when a nurse named Elizabeth Gillespie threw a girl down a flight of stairs to her death, she was brought to trial and sentenced to five years in prison: Davin, *Growing Up Poor*, p. 120.
- p. 448 was told that she could not support six children on the meagre sum she was to receive and was instructed to nominate two children to send to an orphanage: Davin, *Growing Up Poor*, p. 39.
- pp. 448–9 he also spent a good deal of his time modestly but persistently embezzling funds to support his friend and collaborator Karl Marx in London: Henderson, *The Life of Friedrich Engels*, p. 196, and Wheen, *Karl Marx*, p. 83..
- p. 449 He kept a stable of fine horses, rode to hounds at weekends, enjoyed the best wines, maintained a mistress, hobnobbed with the elite of Manchester at the fashionable Albert Club: Henderson, *The Life of Friedrich Engels*, p. 195.
- p. 449 Marx, meanwhile, constantly denounced the bourgeoisie but lived as bourgeois a life as he could manage, sending his daughters to private schools and boasting at every opportunity of his wife's aristocratic background: Henderson, *The Life of Friedrich Engels*, pp. 201–2.

- p. 449 Marx accepted a job as a foreign correspondent for the *New York Daily Tribune*, but with no intention of actually writing any articles: Wheen, *Karl Marx*, p. 180.
- p. 450 'On the hearth was scarcely a spark of fire, and in one corner lay as many old rags as would fill a woman's apron, which served the whole family as a bed': quoted in Wheen, *Karl Marx*, p. 82.
- p. 450 Readers learned how inmates at Lambeth Workhouse were required to disrobe and then step into a murky bath: Koven, *Slumming*, p. 39.
- p. 450 'Youths lay in the arms of men, men were enfolded in each other's embrace': Koven, *Slumming*, p. 55.
- p. 450 Stirred by these reports, a new breed of benefactors began to found an extraordinary range of organizations – a Committee for Promoting the Establishment of Baths and Wash Houses for the Labouring Classes: Koven, *Slumming*, p. 40.
- p. 450 a Society for Promoting Window Gardening Amongst the Working Classes of Westminster: Horn, *Pleasures and Pastimes in Victorian Britain*, p. 38.
- p. 450 even a Society for the Rescue of Boys Not Yet Convicted of Any Criminal Offence: Picard, *Victorian London*, p. 130.
- p. 451 In consequence, they were not much cheerier than prison cells: Picard, *Victorian London*, p. 59.
- p. 451 His name was Thomas Barnardo: The details of Barnardo's life and work, and of his travails with Frederick Charrington, are taken principally from Wagner, *Barnardo*; Koven, *Slumming*; and Cunnigham, *The Children of the Poor*. Additional perspective on Barnardo's reputation among his contemporaries can be found in his obituary in *The Times* of London, reprinted in Brunskill and Sanders, *Great Victorian Lives*, pp. 548–51.
- p. 454 an outpost of 'cold, harsh and emphatically inhuman reserve': Morley, *Death, Heaven and the Victorians*, p. 187.
- p. 454 Gwen Raverat, daughter of a Cambridge academic, recalled in later life how she was required to sprinkle her daily porridge with salt, instead of the glistening heaps of sugar her parents enjoyed, and forbidden jam with her bread on the grounds that anything so flavoursome would wreak havoc upon her moral fibre: Horn, *The Victorian Town Child*, p. 21.
- p. 454 Extremely popular were books that prepared young readers for the possibility that death could take them at any moment, and if it didn't get them it would almost certainly get their mamma, papa or favourite sibling: Jupp and Gittings, *Death in England*, p. 238.
- p. 454 A popular poem, 'The Dreadful Story of Pauline and the Matches', recounted the tale of a little girl who failed to heed her mother's gentle invocation not to

play with matches: The poem and several others by Heinrich Hoffmann, along with original illustrations, are reproduced online, on a website run by the Department of Foreign Languages of Virginia Commonwealth University: www.fln.vcu.edu/struwwel/pauline_e.html

- p. 457 The future Lord Curzon, growing up as the son of a rector in Derbyshire, was terrorized for years by a semi-psychotic governess who tied him in a chair or locked him in a cupboard for hours at a time, ate the desserts from his dinner tray, compelled him to write letters confessing to crimes that he hadn't committed, and paraded him through the local village wearing a ridiculous smock and a placard around his neck: Horn, *The Rise and Fall of the Victorian Servant*, p. 67.
- p. 457 Boys at Radley College, near Oxford, were so systematically starved that they were reduced to digging up flower bulbs from the school gardens and toasting them over candles in their rooms: Pullar, *Consuming Passions*, p. 185.
- p. 457 At other schools where bulbs were not available, the boys simply ate the candles: Chandos, *Boys Together: English Public Schools 1800–1864*, p. 123.
- p. 457 his fingers were thrust into a pot of sulphuric acid to discourage him from biting his nails, and soon afterwards he was required to eat the contents of a bowl of semolina pudding into which he had just vomited: Waugh, *Fathers and Sons*, p. 56. Alec Waugh recounted the perils of public-school life in a popular novel of 1917, *The Loom of Youth*. It was the first book to suggest that homosexuality was something of a motif among the denizens of public schools – a charge that so outraged the governors of Sherborne that they had his name expunged from the school records, as if he had never existed.
- p. 458 'This week I did much better at arithmetic and didn't have the birch once,' one boy wrote home happily from Winchester in the early 1800s: Chandos, *Boys Together*, p. 72.
- p. 458 In 1682, a headmaster at Eton had to resign after killing a boy: Chandos, *Boys Together*, p. 223.
- p. 459 Also much spoken of was the case of the sixth Duke of Somerset, known as 'the Proud Duke', who required his daughters always to stand in his presence: Girouard, *Life in the English Country House*, p. 162.
- p. 460 When as a young man Darwin was offered the chance to join the voyage of HMS *Beagle* he wrote a touching letter to his father explaining precisely why and how desperately he wished to go, but took pains to assure his father that he would withdraw his name from consideration at once if the idea made his father even briefly 'uncomfortable': For the background to Darwin's voyage, see *New Yorker*, 'Our Far-Flung Correspondents', 21 July 1997, and 'Annals of Discovery', 6 September 1969. For Darwin's family relationships, see Desmond and Moore, *Darwin*.

Chapter 19: The Attic <heading>

- p. 462 Called *A Monograph of the Fossil Lepadidae, or, Pedunculated Cirripedes of Great Britain*, it doesn't sound like the most diverting of works, and wasn't, but it secured his reputation as a naturalist, and gave him, in the words of one biographer, 'the authority to speak, when the time was ripe, on variability and transmutation': *New Yorker*, 'Becoming a Great Naturalist', 7 December 1987.
- pp. 462–3 This was a timely book since whales everywhere were being hunted to extinction, but the critics and buying public failed to warm to it: *New Yorker*, 'Reflections', 10 May 1982.
- p. 464 One of the first such finds, in fact, was just a few miles down the road from the Old Rectory in the village of Hoxne, where in the late 1790s a wealthy landowner and antiquary named John Frere discovered a cache of flint tools lying alongside the bones of long-extinct animals, suggesting a coexistence that wasn't supposed to happen: Díaz-Andreu, *A World History of Nineteenth-Century Archaeology*, p. 355.
- pp. 464–5 In a letter to the Society of Antiquaries in London, he reported that the tools were made by people who 'had not the use of metals. . . [which] may tempt us to refer them to a very remote period indeed': Quoted in Sweetman, *Antiquaries*, p. 14.
- p. 465 But then others began finding tools and ancient bones in puzzling proximity: Díaz-Andreu, *A World History of Nineteenth-Century Archaeology*, p. 355.
- p. 465 Then a French customs officer named Jacques Boucher de Perthes found bones and tools together on the Somme plain and wrote a long and influential work, *Celtic and Antediluvian Antiquities*, which attracted international attention: Díaz-Andreu, *A World History of Nineteenth-Century Archaeology*, p. 357. His full name, for the record, was Jacques Boucher de Crèvecœur de Perthes – rather a grand name for a customs officer.
- p. 465 William Pengelly, an English headmaster, re-examined MacEnery's cave and another in nearby Brixham and announced the findings that MacEnery was too distraught to share: Sweetman, *Antiquaries*, p. 16.
- p. 465 Then in the early summer of 1858, from Asia, Alfred Russel Wallace famously dropped a bombshell into Darwin's lap: *New Yorker*, 'Annals of Discovery', 6 September 1969.
- p. 466 Artefacts were dug from the soil 'like potatoes', in the words of one alarmed observer: Heaton (ed.), *Norfolk Century*, pp. 309–10.
- p. 467 In Norfolk, members of the new Norfolk and Norwich Archaeological Society – founded shortly before Mr Marsham took up his position in our parish – stripped well over a hundred burial mounds, a good portion of the county

total, without leaving any record of what they had found or how it was arrayed, to the despair of later generations of scholars: Heaton (ed.), *Norfolk Century*, p. 310.

- p. 467 Perhaps no one better exemplified this new breed of rapacious collector than William Greenwell: Sweet, *Antiquaries*, pp. 19–30.
- p. 467 Pitt Rivers is memorable for two things: as one of the most important of early archaeologists and the nastiest of men: His remarkable life is memorably surveyed in the comprehensively titled *Pitt Rivers: The Life and Archaeological Work of Lieutenant-General August Henry Lane Fox Pitt Rivers, DCL, FRS, FSA* by Mark Bowden, from which many of the details here have been drawn. Details on his work are drawn largely from *General Pitt-Rivers: Evolution and Archaeology in the Nineteenth Century* by M. W. Thompson. It may be noted that there is no consistency among Pitt Rivers's biographers on whether or not to hyphenate the surname.
- p. 468 One, a man of previously mild character, was so driven to despair by young Alexander that he wrote 'BLACKGUARD LANDLORD' with weedkiller in large letters across the Rushmore lawn: Bowden, *Pitt Rivers*, p. 36.
- p. 468 He demonstrated an incandescent bulb at the Paris Exhibition of 1881 that was deemed the equal of anything produced by Edison or Swan: Weightman, *The Industrial Revolutionaries*, p. 339.
- pp. 468–9 For all his personal shortcomings, Pitt Rivers was an outstanding archaeologist – indeed, was one of the fathers of modern archaeology: Sweet, *Antiquaries*, pp. 20–23.
- p. 469 Unusually, he was less interested in glittering treasure than in the objects of everyday life: Romer, *The History of Archaeology*, pp. 32–7.
- p. 469 In Orkney, a farmer at Stenness, not far from Skara Brae, demolished a prehistoric megalith known as the Stone of Odin because it was in his way when he ploughed, and was about to start in on the now-famous Stones of Stenness when horrified islanders persuaded him to desist: Ritchie, *Prehistoric Orkney*, p. 11.
- p. 469 Visitors commonly carved their names in the stones or chipped off pieces to take away as souvenirs: Hill, *Stonehenge*, pp. 127 and 142.
- p. 469 When people complained, a railway official countered that Stonehenge was 'entirely out of repair, and not the slightest use to anyone now': Hutchinson, *Life of Sir John Lubbock*, pp. 194–5.
- p. 470 At one point when Darwin was depressed, young Lubbock was the only visitor he would receive: Desmond and Moore, *Darwin*, p. 361.
- p. 470 He was a tireless, if slightly eccentric, experimenter: Hill, *Stonehenge*, p. 125.

- p. 470 He had a particular interest in insects, and kept a colony of bees in his sitting room, the better to study their habits: Patton, *Science, Politics and Business in the Work of Sir John Lubbock*, p. 110.
- p. 470 In 1886 he discovered the pauropods: Cloudsley-Thompson, *Spiders, Scorpions, Centipedes and Mites*, p. 75.
- p. 470 No less significant was his study of the variability of nervous systems in insects, which lent important support to Darwin and his idea of descent with modification just at a time when Darwin really needed it: Patton, *Science, Politics and Business in the Work of Sir John Lubbock*, pp. 39–43.
- p. 470 As an archaeologist, he coined the terms 'palaeolithic', 'mesolithic' and 'neolithic': Sweet, *Antiquaries*, p. 19.
- p. 472 bank holidays for a long time were affectionately known as 'St Lubbock's days': Hutchinson, *Life of Sir John Lubbock*, p. 195.
- p. 472 Lubbock bought the threatened land, along with two other ancient monuments nearby, West Kennett Long Barrow and Silbury Hill: Hill, *Stonehenge*, p. 140.
- p. 473 Because the protection of monuments was such a sensitive issue, it was agreed that the first Inspector of Ancient Monuments should be someone landowners could respect, ideally a large landowner himself: Thompson, *General Pitt-Rivers*, pp. 58–68.
- p. 473 She was younger than some of his children, which made for awkward relationships, and appears to have had little interest in his work: Bowden, *Pitt Rivers*, p. 35.
- p. 473 Even Lubbock hesitated before relinquishing Silbury Hill: Thompson, *General Pitt-Rivers*, p. 64.
- p. 474 Even then it asked him to stop 'touting' for more monuments: Bowden, *Pitt Rivers*, p. 99.
- p. 474 Around the turn of the century it was reported that an anonymous buyer was interested in shipping the stones to America: Hill, *Stonehenge*, p. 144.
- pp. 474–5 Even as all this was unfolding, life in the British countryside was being severely reshaped by an event that is little remembered now, but was one of the most economically catastrophic in modern British history: the agricultural depression of the 1870s, when harvests were abysmal in seven years out of ten: The collapse of British farming in the late nineteenth century is discussed in Mingay (ed.), *The Agricultural Revolution*, pp. 312–16.
- p. 475 Between 1872 and 1902, American wheat production increased by 700 per cent. In the same period, British wheat production fell by more than 40 per cent: Mathias, *The First Industrial Nation*, p. 441.

- p. 475 More than one hundred thousand farmers and farmworkers left the land: Bax, *The English Parsonage*, p. 194.
- p. 475 It invented a tax designed to punish a class of people who were already suffering severely and had done nothing in particular to cause the current troubles: Cannadine, *The Decline and Fall of the British Aristocracy*, pp. 96–7.
- p. 476 Death duties in Harcourt's time were a comparatively modest 8 per cent on estates valued at £1 million or more, but they proved to be such a reliable source of revenue, and so popular with the millions who didn't have to pay them, that they were raised again and again until by the eve of the Second World War they stood at 60 per cent: Mathias, *The First Industrial Nation*, p. 428, and Cannadine, *The Decline and Fall of the British Aristocracy*, pp. 96–7.
- p. 477 There was hardly a great house in Britain that didn't yield something at some point: The losses and disposals are summarized by Littlejohn in *The Fate of the English Country House*, and Worsley, *England's Lost Houses from the Archives of Country Life*.
- p. 478 So low did the fortunes of stately homes sink that one in Lincolnshire reportedly was bought by a film company just so that it could burn it down for the climactic scene of a movie: Cannadine, *The Decline and Fall of the British Aristocracy*, p. 119.
- p. 478 A grandmother at one stately home, Simon Jenkins relates, refused to leave one of the rooms whenever there was horse-racing on the television: Jenkins, *England's Thousand Best Houses*, p. xxv.
- p. 478 Altogether the curators, Marcus Binney and John Harris, counted 1,116 great houses lost: *The Times*, 'Denying Victory to the Vandals' (by Marcus Binney), 18 November 2005; and *Society for the Protection of Ancient Buildings News*, 'The Destruction of the Country House', vol. 23, no. 4, 2002.
- p. 480 *Crockford's Clerical Directory* of 1903 bleakly recorded that a 'considerable section' of the clergy now lived at a level of 'bare subsistence'. A Reverend F. J. Bleasby, it further noted, had made 470 unsuccessful applications for a curacy, and finally, in humbling defeat, had entered a workhouse: Savidge, *The Parsonage in England*, pp. 224–5.
- p. 480 'If you played a brass band in my kitchen I don't think you could hear it in the drawing room': Quoted in Bax, *The English Parsonage*, p. 200.
- p. 480 Many a parsonage has passed twenty, thirty, even fifty years without any redecoration at all,' Alan Savidge wrote in a history of parsonages in 1964: The fate of Church of England properties in the twentieth century is thoroughly surveyed in Savidge, *The Parsonage in England*, pp. 162–204.
- p. 480 The simplest solution for the Church was to sell off the troublesome parsonages, and to build something smaller nearby: The history of the

disposal of Church of England houses is thoroughly examined in Jennings, *The Old Rectory*.

- p. 482 Go way back – to 400,000 years ago, say – and you would find lions, elephants and other exotic fauna grazing on arid plains: Stringer, *Homo Britannicus*, pp. 94–100.
- p. 483 Of the total energy produced on Earth since the Industrial Revolution began, half has been consumed in the last twenty years: Flannery, *The Weather Makers*, p. 168.