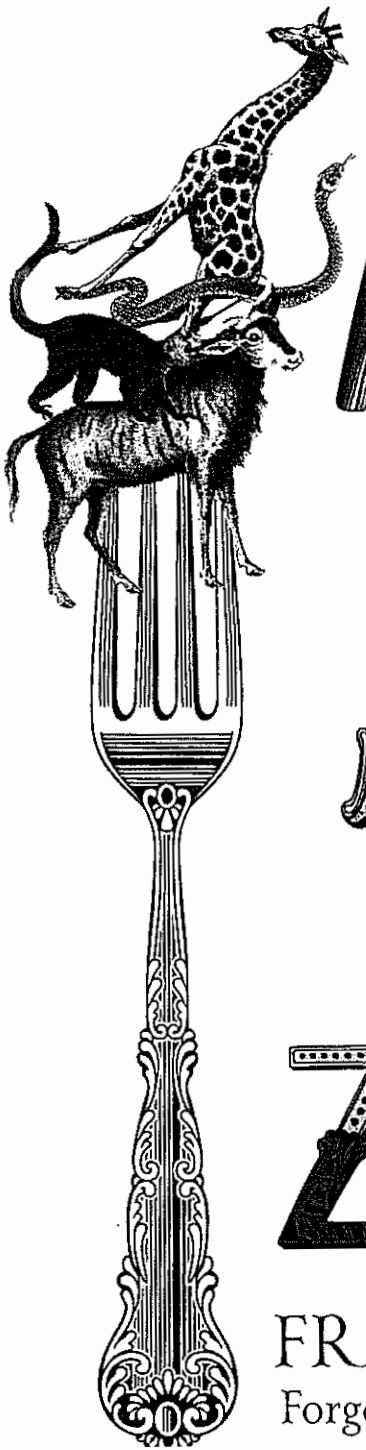
RICHARD GIRLING

THE MAN WHO ATE THE ZOO



FRANK BUCKLAND

Forgotten Hero of Natural History

THE MAN WHO ATE THE ZOO

CHAPTER ELEVEN

Mr Walpole's Pleasure

Students of the 1860s could be forgiven for believing the apocryphal Chinese curse, *May you live in interesting times*. 1866 is an arbitrary year chosen only because it is the point our narrative has reached, but it serves as well as any to give Frank's life a context. America was enjoying (or, in the southern states, enduring) its first year of peace after the Civil War. The infant superpower celebrated by adopting the Fourteenth Amendment, enshrining the equality of citizens under the law, a reform that went down better in the northern states than in the South, where white supremacists founded the Ku Klux Klan. In Sweden Alfred Nobel invented dynamite (patented in Britain, May 1867), and in America Andrew Rankin perfected the stand-up urinal. In Europe a fleeting Austro-Prussian War ended with defeat for Austria at the hands of Prussia and Italy. The Prussian Chancellor, Otto von Bismarck, survived an assassination attempt, as did (twice) Tsar Alexander II of Russia. Isambard Kingdom Brunel's *Great Eastern* succeeded at the second attempt in laying a transatlantic telegraph cable, 1,686 miles long, from Ireland's Valentia Island to Heart's Content in Newfoundland. The first message sent down the line was stiff but optimistic: 'A treaty of peace has been signed between Austria and Prussia.' Royal approval was conveyed from Osborne House on the Isle of Wight:

'The Queen congratulates the President on the successful completion of an undertaking which she hopes may serve as an additional bond of Union between the United States and England.' In July, shortly after his eighteenth birthday, W. G. Grace hit 224 not out for an All England XI against Surrey at the Oval. Across the Thames in the same month, cholera took yet another bite out of London's flank, killing thousands in the East End. Other deaths that year included those of Thomas Love Peacock and the one-time Surveyor General of India, George Everest, for whom the mountain was named. Those born in 1866 included Beatrix Potter, H. G. Wells, Herbert Austin (founder of the Austin Motor Company), George Herbert, fifth Earl of Carnavon (who would underwrite the search for Tutankhamun), and the future Labour prime minister Ramsay MacDonald. Disunity in the Liberal Party led to the resignation of the prime minister, Lord John Russell, and a third prime-ministerial term for the Conservative Earl of Derby (who would die, worn out, only three years later, having uttered the bleakest last words ever recorded: 'Bored to utter extinction'). July also saw a royal wedding. Queen Victoria's third daughter, Helena, married another future patron of Frank's, Prince Christian of Schleswig-Holstein. Though the Wright brothers' first powered flight was still thirty-seven years in the future, faith in heavier-than-air flying machines was already sufficient to precipitate the foundation of the Aeronautical Society of Great Britain (later the Royal Aeronautical Society), which held its first public meeting at the Society of Arts on 27 June. It was here that the engineer Francis Herbert Wenham delivered the lecture 'Aerial locomotion and the laws by which heavy bodies impelled through air are sustained', which would inspire would-be aviators for the rest of the century and beyond. Back on the ground, cutting-edge technology still meant coal-fired steam power, which was

revolutionising marine transport without necessarily making it any safer. The risks began at the coal face – in December, explosions at the Oaks colliery near Barnsley, Yorkshire, killed 361 miners and 27 rescuers. There were two shipping disasters: the *Monarch of the Seas*, which sailed from Liverpool on 19 March with 698 passengers and crew and was never seen again; and, more famously (though it cost only 270 lives), the loss in the Bay of Biscay of the SS *London*, en route to Melbourne from Gravesend. This disaster is remembered chiefly because of another Victorian phenomenon, the indefatigable Scots poet William McGonagall. Nobody should believe his 'Tay Bridge Disaster' was the worst poem ever written until they have tried 'The Wreck of the Steamer "London" while on her way to Australia'. The first verse sets the scene:

> 'Twas in the year of 1866, and on a very beautiful day,
> That eighty-two passengers, with spirits light and gay,
> Left Gravesend harbour, and sailed gaily away
> On board the steamship 'London',
> Bound for the city of Melbourne,
> Which unfortunately was her last run,
> Because she was wrecked on the stormy main,
> Which has caused many a heart to throb with pain,
> Because they will ne'er look upon their lost ones again.

It grinds on for another eight steadily worsening, factually wrong but strangely endearing verses. What was remarkable about the Victorians was not just their appetite for innovation and improvement but their glad embrace of the eccentric and the weird. 'Characters' abounded, not the least among them Frank Buckland. What on earth would he come up with next? His unpredictability was part of what made him popular. No

one ever knew what he might say or do, or what instruction he might give to his readers. McGonagall did not hit peak notoriety until the 1880s, so it is unlikely that Frank knew of him. This was a pity. McGonagall was a kind of literary freak (his deafness to criticism suggests Asperger's syndrome), and Frank collected freaks like other men collected stags' heads. Neighbours in Albany Street would crane their necks whenever a cab drew up. Who or what would step out next? Would it be eight feet or three feet tall? One head or two? Man, woman or beast? Across the threshold trooped much of the raw material for what would become Series Four of the *Curiosities of Natural History*. This would delight both his armchair admirers, who shared his love of outlandishness, and his critics, who liked having something to snipe at. What had dwarfs and giants to do with natural history? Frank's answer was always the same: if something existed, then it was interesting.

We may be glad that the exhibition of deformity in the twenty-first century is considered too offensive to contemplate. No one, not even the unfortunate woman herself, could now make a show of Julia Pastrana. It might be argued on the nineteenth century's behalf that the fear and cruelty of previous centuries had been supplanted by a simpler kind of fascination, lively rather than morbid. People didn't want to torture freaks or put them to death; they simply wanted to look at them. To Frank they were friends. He gave dinners in their honour, attended their weddings, celebrated the births of their children. His friendship with the genial French giant Jean-Joseph Brice began while he was still in the army, when Brice was a frequent guest at the barracks. 'It was a great fun', Frank wrote, 'to see our great, tall Life-Guard Troopers stand by his side, or walk under his arm, and look *up* to him.' His other special favourites were the 'Kentucky Giant', Captain Martin Van Buren Bates, and

the 'Nova Scotia Giantess', Anna Swan. He first met them in 1871 when both were aged twenty-four. Captain Bates, he found, was a 'splendid-looking fellow, very unlike the pictures of the giant in the "fe fa fum; I smell the blood of an Englishman" legend'. But it was Anna who captivated him.

> I make bold to say that Miss Swan is the most agreeable, good-looking giantess I ever met; by her side I feel but a pigmy, for she towers far above my head; and an ordinary tall man, say a Life Guardsman, would look like a doll by her side. One never dares ask the age of ladies, nor their height either. Miss Swan is somewhere between seven and eight feet. I cannot say her exact height to an inch, but it is nearer eight than seven; at a guess (I hope Miss S. will forgive me) I should say seven feet six or seven inches is about the mark . . . Miss Swan is a native of Nova Scotia, is lady-like in manners and address, and would be a most agreeable neighbour at a dinner party . . . Captain Bates . . . is about as tall as Miss Swan, and a splendid couple they make when standing side by side . . . We hear rumours of the god Cupid having been seen.

The couple were married at St Martin-in-the-Fields in June 1871, and after a modest interval the new Mrs Bates would produce a baby whose birth weight topped 23lb. Her bridesmaids, Christine and Millie McCoy, conjoined twins better known as Christine-Millie or the Two-headed Nightingale, were close to normal height but no less extraordinary than the happy couple themselves, and they were just as much a part of Frank's colourful coterie of friends. The writer of *The World* magazine's 'Celebrities at Home' series was as impressed by

Huge love: Captain Martin Van Buren Bates and his bride Anna Swan, who was a fraction under eight feet tall

the human element of the Albany Street ménage as he was by the zoological.

> It is [Frank's] delight to entertain celebrities on view in the Town. This *penchant* makes him the idol of all the children and stray waifs in the neighbourhood, who crowd round the door when a party is expected, or clamber up the railings to get a good view of the giant going in, or the dwarf coming away. The due etiquette to be observed at these feasts is at times perplexing. When Chinamen, Aztecs, Esquimaux, or Zulus are the guests, the chief difficulty is with the bill of fare; but the ceremonial becomes complicated if Mrs. Buckland has to choose

> which arm to take of the four owned by the Siamese Twins; nor are matters put right by Mr. Buckland leading the way with the Two-headed Nightingale; while much discussion is needed to decide whether Mr. Buckland should hand in Julia Pastrana (the hairy woman), or that personage, by virtue of her beard, should take in the lady of the house.

The 'Siamese Twins' referred to here were the originals, the first ever to be so called, Chang and Eng Bunker. They had been born near Bangkok in Siam – modern Thailand – in May 1811. Now in their fifties, they were veterans of the international circuit from which they had been irresistibly drawn into the ever-widening Buckland circle. They were fully formed, independently functioning individuals linked by a cartilaginous bridge at the sternum and prevented from leading separate lives only by the fusing of their livers. If anything, they were even more astute than the giants. Their career began in 1824 when a Scottish merchant, Robert Hunter, saw them swimming (or, by some accounts, rowing a boat) and did some swift mental arithmetic. A deal with their parents followed, and the teenage twins were soon embarked on a world tour. Being far from stupid, they quickly realised they had no need of a manager and could easily and more profitably run their own business. At the expiry of Hunter's contract they seized the initiative. In 1839 they bought a farm at Traphill in North Carolina, where they became naturalised American slave owners, adopted the surname Bunker and married two local sisters, Adelaide and Sarah Ann Yates. The four-in-a-bed marital arrangements were unorthodox but fruitful: Chang's wife, Adelaide, produced ten children, and Eng's, Sarah Ann, twelve. The American Civil War, in which the twins' sons

fought on the Confederate side, was unkind to them. Defeat forced them to return to the exhibition circuit and set themselves on the course that would lead, time and again, to Albany Street. But they were getting old now, and though Frank remained fond of them he was developing a stronger affection for Anna Swan's bridesmaids, Christine and Millie McCoy, the Two-headed Nightingale.

> The Siamese Twins were certainly very wonderful people, but in Christine-Millie we have, I think, something more remarkable. The Siamese Twins are two old gentlemen somewhat advanced in years.* The 'Two-headed Nightingale' is composed of two charming young negress girls, who are united back to back by an indissoluble band. I do not recollect to have seen a more intelligent, ever-laughing happy face than that of Miss Christine. She has dark rolling eyes and jet-black hair, and though her features are those of the daughters of Ham, yet there is a quickness and intelligence about her that shows culture and education.
>
> Millie is like her sister in face and in her charming manners. They live in perfect concord, and from long habit walk about and even dance, without any appearance of effort or constraint. They are called 'Two-headed Nightingale' because they both sing very well, and the duets they practise show they have good voices, which have been successfully cultivated. Their age is nineteen.

* In fact they did not have long to live. Chang began to drink heavily, and in 1870 suffered a stroke. He died in his sleep, aged sixty-two, on 17 January 1874, of a cerebral blood clot. The previously healthy Eng died three hours later.

The 'Two-headed Nightingale', Christine and Millie McCoy

Like the Siamese Twins, Christine-Millie had come to Europe from North Carolina, but there the similarity ended. The plantation owners Chang and Eng had possessed slaves. Christine and Millie *were* slaves, or at least were the daughters of slaves. Their parents, Jacob (an African) and Monemia (Native American), were owned by Jabez McKay, a blacksmith. When the twins were ten months old, McKay sold them to a showman for a thousand dollars. After being traded several times more, Christine and Millie found themselves in the ownership of Joseph Pearson Smith, who hired them out to showmen. They were still only three. Somehow during their travels Pearson Smith seems to have lost track of his investment, which, following an appearance at P. T. Barnum's American Museum in New York, was

soon on its way to England under the control of another couple of chancers, 'Professor' W. J. L. Millar and William Thompson. By late 1856, when the girls were five, Pearson Smith had picked up their trail and now headed to London with their mother to reclaim his property. Give him his due. As slave owners went, he was not a bad one. Back in North Carolina the girls were taught to read, write, recite, sing, dance and play the piano, skills which would enable them to develop the stage act that made them popular across two continents. In 1871 they gave a number of private performances to the most exalted of their many admirers, Queen Victoria, at Buckingham Palace. The Queen gave them each a diamond hairclip. The coincidence of Frank's and Victoria's tastes is the clearest illustration of differently calibrated moral compasses, then and now. But who are we to say the nineteenth century was wrong? Why should conjoined twins not earn a living? And if they could sing and dance, then why should that living not be earned on stage? There is no more effective a stigmatiser of otherness than 'good taste', which was never a vice of Frank's.*

The giants and the twins all worked at the upper end of the show trade, capable of living up to their billing. The giants were gigantic. The Two-headed Nightingale sang. Lower down the scale, in darkened tents and the back rooms of inns, the business was less scrupulous. But Frank loved it just the same. He was a connoisseur of ingenious frauds and could never resist a huckster's stall. He and Jean-Joseph

* After a spell with Barnum's travelling circus, Millie's poor health caused the pair to retire some time in the late 1880s, when they returned to North Carolina and busied themselves with charity work on behalf of African American schools and churches. Millie died of tuberculosis on 8 October 1912. Christine followed her some hours later, helped on her way by morphine.

Brice enjoyed a good laugh over a fossil horse tooth which 'a gentleman' had sent to Frank as the fang of a giant, and he cherished an old story (dating from 1721) of a showman exhibiting the bones from a porpoise's fin as those of a giant's hand. Frank's own forensic skills were not much tested by the 'Spotted Child', viewable for the price of sixpence at the Windsor Fair in 1861. The 'exceedingly pretty little flaxen-haired, blue-eyed, English girl' was indeed spotted as advertised, but only (as Frank's magnifying glass revealed) by reason of the strong solution of silver nitrate which had been sprinkled on her skin. Other stories were sadder. 'The Woolly Woman of Hayti' was advertised as a young beauty with long flowing hair but turned out to be a poor shrivelled old hag whose abnormal mass of hair was, like Julia Pastrana's, caused by a distressing disease. Or the all-too-well-named 'Australian Fat Boy', twenty-three stone and certain before long to give some heavy work to a gravedigger. But nothing amused Frank more than a good supply of 'mountebanks' at a racecourse or a fair. 'I never neglect any opportunity of learning how some of the more needy of the mixed multitude endeavour to gain a scanty living, and transfer a few coins from the pockets of their richer fellows to their own.' Some of the richest pickings were on Epsom Downs. On Derby Day one year he noted in quick succession a man 'with an enormous shock of wool-like hair . . . like a New Mexican savage' who, after years of practice and by pinching his nose, had taught himself to bray like a donkey; a pale man describing himself as the 'American diver', whose trick was to fish coins out of a water-filled tub with his lips; a grubby man who claimed to have been 'blown up by fire-damp' and who displayed a travel-stained model of a coal mine; a man with an electrical apparatus from which he dispensed shocks at a penny a time; a fire-eater; a stout acrobat

self-styled as the 'Infant Hercules'; and a man who cracked stones with his fist.

None of this dented Frank's admiration for the more professional entertainments in London theatres. At the Alhambra in Leicester Square he was transfixed by the daredevil 'Omar', who walked upside down with his feet hooked into iron rings ninety feet above the stage – a performance 'really fearful to behold'. He applauded (and puzzled over) the skills of the escapologist 'Herr Tolmarque', whom Frank himself roped to a chair; and the 'Human Frog', who could smoke a pipe and drink a bottle of milk while submerged in a tank of water. Yet Frank never lost his taste for the penny-a-views, especially those lining the road outside the Islington Cattle Show. There he and Abraham Dee Bartlett paid their pennies to visit Fatima, 'the bodyless and legless girl', who was seen afterwards with a full complement of limbs skipping across the street to buy beer; the 'Irish Prize Wonder', a 'hideous fat woman who could hardly waddle'; and the 'Indescribable Female' and the 'Indiarubber Man', who turned out to be the dried body of a child about five years old, minus a leg and an arm, and a gymnast. Best of all was the 'Wild Man of the Woods', a 'very ugly nigger' who exhibited himself in a fried-fish shop. 'He gets his living by making hideous faces . . . The other accomplishments of the wild man are, I believe, that of biting off the heads of live rats and eating their bodies, dancing on red-hot irons, and drinking spoonfuls of lighted naphtha.'

Frank also felt great sympathy for the threadbare hordes of men, women and urchins who haunted the pavements peddling knick-knacks and novelties. A man in Leicester Square sold functioning microscopes (Frank calculated a magnifying power of twenty diameters), fashioned from pill boxes with lenses made by heating Canadian balsam. A glass-blower sold

glass pens, breast pins and peacocks; a metalworker offered a five-part spit for roasting meat, so ingenious that if he had a chance, said Frank, there was 'no telling how many benefits he might confer upon mankind'. All these and more were offered for a penny each, and Frank bought them by the handful. 'I am forming a collection of various articles bought for one penny in the London streets; and I would beg my reader not to pass by these ingenious, poor, hard-working people, but to give them a kind word of encouragement, and a little assistance by purchasing a sample of their goods.'

Sometimes customers got nothing more for their money than a good yarn. Abraham Dee Bartlett told Frank of a servant girl who was sent to buy milk from a milkwoman near Albany Street, and who was startled to find a stickleback swimming in the jug. 'When the fish, all alive oh! in the cow's milk, was shown to the old woman,' wrote Frank, 'she turned round to her boy and boxed his ears. "Jimmy, oh! Jimmy, you lazy rascal," she said; "you never strained the water!" ' If such petty frauds were unexceptional, then so was the fish. Frank explained in *Natural History of British Fishes* that sticklebacks made 'a very great nuisance' of themselves by getting into reservoirs and thence being pumped through the mains. He was, nevertheless, full of admiration for the tiny fish's skill in building nests, works of art which 'exceed in beauty and complexity anything that ever was thought of by the human mind'. In Prussia, he reflected, sticklebacks were fed to ducks and pigs, so why not in England? No opportunity should be wasted to reduce the cost of meat.

The relationship of art with nature was another of Frank's favourite tub-thumps. As with Landseer's lions, his taste was for accuracy and he was contemptuous of anyone who imagined creativity could transcend reality. In October 1862 he

was astounded by the precision of a copper eagle made by a man named Phillips who exhibited it in Piccadilly. This was no mere 'reading-desk eagle' but an exact, life-size replica, every feather on its outstretched wings separately made and attached. 'I deeply pity from the bottom of my heart', said Frank, 'the poor "critic" ' who could see nothing artistic in this. He proceeded to show the poor critic exactly how the job should be done. In May 1872 he paid a visit to the Royal Academy, where he intended to ignore the catalogue and 'see how far the Painter's art could convey what he really meant without the interposition of a printed description'. The pick of the exhibition, he reckoned, was a painting of an elderly grey-haired man with his hands tied behind his back, standing in front of three lions and four lionesses. He scanned the picture – side to side, top to bottom – like a sleuth at a crime scene:

> The beasts are evidently very hungry, and they have slain and eaten a man not very long ago. There is a blood-stained spot on the ground, and I see a human femur (left side), a right tibia, a left humerus, and a bit of the pelvis, lying about. A bit of a scapula has flesh still upon it. All the bones are human. *Why* don't these savage and starved beasts instantly fly upon and kill this poor old man? Look at that three-year-old Lion coming round from behind the others; a sneaking, cat-like, but magnificent beast, worth £200 at least to our friend Jamrach, the animal-dealer. Look at that old Lioness snarling and showing her awful teeth and spine-covered tongue, and the old Lion licking his quivering be-whiskered lips. What is that curious light falling full and glorious upon the man? It is not natural, it is not the light of the sun or the moon, nor is it the electric light. By Jove!

I see. It is 'Daniel in the Lions' Den'. Splendid – grand. I congratulate the artist.*

Others did not get off so lightly. Frank vehemently despised a picture of 'a very thin, tall lady in the costume of Eve [i.e. naked], chained to a rock by her wrists' while 'an idiotic-looking young man' stabbed at a 'nondescript beast' apparently meant to be a dragon. Evidence of idiocy was everywhere. 'Fancy going out to fight a dragon with pigeons' wings tied to one's ankles . . . and with bare legs, like a Highlander!' This feeble hero was no butcher or anatomist either. His pathetic sword-thrust, a few inches into the dragon's mouth and just inside the ramus of the left lower jaw, would have done no more than annoy the monster and not hurt it a bit. 'It would simply transfix his parotid gland, if a dragon has a parotid gland . . .' A hunting scene ('not painted by a sportsman') was also swatted for its lack of realism. 'Who ever saw a hunted and beaten fox with clean fur like a lady's muff?' In another, an old man carrying five wolves' heads was insufficiently stained by his grizzly exertions. 'The hounds are much too clean: they don't look as if they have been fighting with wolves. If I had painted this picture I should have made the hounds with blood about their chaps, and one of them certainly going on three legs from a bite in the fore paw.' A picture of a North American Indian sitting by a fire on a prairie was simply ridiculous. The logs were too big, and where on a prairie would the man have found them anyway? Behind him in the distance his friends could be seen riding away, followed by his

* Frank does not identify the artist but it was almost certainly Briton Rivière, whose *Daniel in the Lions' Den* answers precisely to Frank's description and was painted in the same year, 1872. The painting is now in the Walker Art Gallery, Liverpool.

own loose horse. Frank supposed the man must be ill, for he showed no sign of injury. 'He has some internal disease, possibly peritonitis . . . I suppose they [the other Indians] are going for the doctor.' In fact they were doing no such thing. Peeking at someone else's catalogue, Frank found the picture was called *Left to Die*.* Failure glared at him from every wall: 'An animal, I suppose meant for a red deer, wounded – a bullet-wound on the left side. A wound at this part would not bleed much, because the scapula would act as a valve to keep the blood inside the thorax; and yet there is no end of blood. A miserable production, and as far as the animal goes not fit for a public-house sign. The rest of the scenery good.' After Frank's article appeared in *The Times* (where according to Bompas it caused 'much amusement'), he received a letter from Mr G. A. Sale, congratulating him on his 'very sensible and suggestive notes' on the pictures' zoological accuracy. 'These fifteen years,' Sale went on, 'I have been the art critic of the "Daily Telegraph", and am even now drudging at the canvases in Piccadilly; but I can assure you that your professed rough and ready critique has been to me a very valuable lesson, and I hope it may be one by which my colleagues in the ungentle art may profit.' Frank treasured this as 'one of the greatest compliments I ever received'.

The fourth volume of *Curiosities of Natural History*, published in 1872, would focus heavily on the giants, flea circuses, mountebanks and all the other human flotsam that bobbed across the surface of Frank's life. All this tended to undermine his reputation for seriousness, and yet the longest section of the book is the last – a lingering chronicle of his burgeoning love affair

* This can be identified as the work of the English artist Frances Anne Hopkins, painted in 1872 following travels with her husband in Canada.

with salmon. He had thrown himself at it like an impressionable schoolboy embracing a new and all-consuming passion – in other words, exactly like himself. *Everything* was a thrill to him. The love affair ('Mysterious water fairies, whence come ye?') had blossomed on the trip to Ireland that had so enraged Francis Francis. Though his accounts of it were often playful, his pursuit was intense, focused and single-minded. It was a quest for knowledge, no scrap too small to be noticed, but there was an art to it. Like a novelist he was always looking for the detail that would tell the story. He urged others to do likewise.

> Keep your eyes open, your intelligence sharpened; facts, facts, facts are what we want; for no one knows but that a fact, insignificant in itself – if it only be a fact – may lead to the most important results, not only in the cultivation of land, but also in the hitherto much-neglected cultivation of that which composes two-thirds of the earth, viz., the waters, whether inland or oceanic. He, therefore, who will discover any new fact relative to the natural history of useful fishes, as the salmon, trout, sole, turbot, and the bivalve puzzle, the oyster, will be conferring great benefit upon the public at large.

It could never be said that Frank failed to practise what he preached. He scooped up facts as a whale scoops up krill. Only by observation could the lives of salmon be unravelled and understood. This meant mapping entire river catchments, and it prompted him to return to a favourite theme – that people should take as much pleasure from watching wild creatures as from hunting them. He was appalled by the poachers, 'cowardly and unEnglish-like', who dragged clusters of hooks like grapnels through shoals of fish, trying to hook them in the side and maiming more than they caught. This happened most often beneath

mill wheels, which themselves caused horrible injuries to the fish. It made Frank think about ways salmon might be prevented from getting into mill races: gratings, nets, underwater fencing, even *trompe l'œil* waterfalls. At least in Galway there were salmon for the poachers to hunt. Frank was even more distressed by what he saw, or failed to see, as he travelled around the country. Thousands of miles of upland streams were flowing deserted and salmonless. Why? Because they were blocked by mills and weirs, the deadening hand of industry snuffing out a species which, instead of gracing the nation's tables, was being treated as vermin. It was doubly senseless because it was unnecessary. All that the fish needed to negotiate such obstacles was a simple salmon ladder like the one he had climbed at Galway.

Frank listened carefully to what the Galway netsmen had to tell him. One of the great unknowns was how far salmon swam out to sea. The fishermen assured him they had seen them far out into the Atlantic, twenty miles or more, beyond the Isle of Arran. Other questions were easier. What was the secret of the salmon's sharp eyesight? Frank did exactly what we would expect him to do. He sliced open an eye, detached the lens and found it was better than his own magnifying glass for reading the small print of a newspaper. He also wanted to know how the fish kept themselves steady against powerful flows of water. Exactly how strong were they? He strapped a scale around his waist, harnessed a salmon to it and clocked an initial thrust of 23lb as the fish tried to swim away. It interested him that its efforts dropped off very rapidly: the second thrust was 20lb, the third 15lb, and then came no more serious thrusts at all. This was handy for fishermen to know. 'I am convinced', wrote Frank, 'that a salmon's escape from the angler's hook depends much upon the first plunge he makes, and that although his power to go against the stream be very great, yet he is very soon what is vulgarly called

"done", if called upon to make extra exertion.' He made further tests of the fish's mysterious physiology. Crawling through a salmon trap, he sneaked up on a fish that had been hiding in the shadows. After a few failed attempts he managed to lay a finger directly over its heart.

> I could feel it distinctly beating and thumping through the skin . . . I then requested a friend standing upon the weir to take out his watch, and we thus ascertained that the pulse of this salmon beat 92 to the minute. I then tried [a second] fish, and found that his pulse was 103 to the minute. I also counted their respirations or the movements of the gills in breathing; the first fish respired 77 times in a minute, the second fish 79 times in a minute. I must, however, state that these fish had been running about the cruive [a weir or dam for catching salmon] . . . and I dare say they were in a bit of a fright, and their pulse beat quicker than usual, as I know from experience the pulse of a patient who comes to consult the doctor is often bounding away . . . from pure nervousness.

Another question: how long could fish survive out of water? Frank hung a freshly caught 10lb salmon in a landing net and was 'rather surprised' (it is unclear whether by the length or shortness of the elapsed time) that it ceased kicking in seven minutes and was dead in eleven. A fish knocked on the head by a 'priest' or killing-stick by contrast would die in twenty-five seconds. Much of Frank's time in Galway was spent flat on his belly, peering over the riverbank. He noticed the fish's habit of assembling in groups, and of reassembling in the same groups after they had been disturbed. '[Their] favourite position seems to be side by side, their fins almost touching, like cavalry horses

in the stable at Aldershot; and when one of the party goes away he soon comes back and "falls" in with a regularity that would do credit to a soldier.' He noted how their habits changed at spawning time when, 'by a wonderful instinct', they spread themselves over hundreds of square miles, 'nature's object evidently being to scatter the supply of young fish over as large a tract of country as possible'. He noted, too, how the herding tendency reasserted itself when the smolts (young fish) set off downriver towards the sea. This sparked a lively correspondence on whether the fish travelled downstream head or tail first. One letter writer thought they went tail first so that they could take note of the landmarks – rocks and tree stumps, perhaps – to help guide them back from the sea. Frank himself thought they went tail first over waterfalls to protect their heads. Another correspondent, J. H. Nankwell, believed the fish kept their heads out of the current to save themselves from drowning.* What mattered to Frank was observable fact – the *what* rather than the *why* or the *how*. It seemed to him that salmon, like birds, had mysterious powers of navigation, and a mysterious ability – even at high speed through the most intricate labyrinths of weeds, rocks and roots – to avoid collisions. The *why* and the *how* were unknowable to any but God. Another point of disagreement was how long smolts spent at sea. Experiments with marked fish at Galway revealed no fixed

* Nankwell wrote: 'In the fish, as soon as the mouth is opened, the water rushes in to fill the vacuum so formed, and then, the mouth being closed, the muscles (Pharyngeal?) contract, and send the fluid out over the gills. The water thus falls in with the general current and is carried off; on the other hand, if the animal has to pump the water back against a strong current, the muscular effort to do so must be increased manifold (?), and the creature must feel more or less of what we call dyspnoea [breathlessness].' Frank's basic observation was correct. Smolts are carried seaward, tail first on the current – maximum mileage for minimum effort.

pattern. Some, but not all, stayed out for a single year before returning as grilse. Others lingered two years or more. This very randomness, Frank argued, was fitted to nature's purpose.

> It appears to me to be a law of nature that the salmon (say in an individual river) shall never be *all* subject to the same influences at the same time, and this is as a protection against their numerous animate enemies, as well as pollutions . . . Nature seems to say, 'I will send some of you youngsters up the river in 1856 and some of you shall stay in the sea till 1866; so that if the first lot of you get destroyed, there will still be a second batch on hand to take your places and keep up the supply in the river for future years.' Again, in our own species, we do not all take our stand in the battle of life at the same age. Some boys are sent to 'cut their own grass' at eighteen, some not till twenty-two or twenty-three. Young ladies, as well, do not always 'come out' into society at exactly the same age.

But nature could not do its work without the active cooperation of humans. Waters had to be stocked and seeded, otherwise the 'water farmer' could look forward to barren harvests. The fish needed to be protected from poachers at spawning time. They needed clean water, and they needed help to overcome man-made obstacles. Easy to say, and in some places perhaps not too hard to achieve. But in the rivers of the muck-and-brass industrial heartlands, foaming with chemical effluents and sewage, clogged with locks, weirs and other barricades haunted by poachers, salmon might seem about as likely as migrating elk. A Royal Commission in 1860 had painted a picture of unrelieved bleakness. '[The] considerable diminution of salmon in the rivers of England and Wales was fully substantiated. In some rivers

the fact was patent and notorious. Salmon formerly abounded, but had almost or altogether ceased to exist . . . Weirs, fixed nets and fish-traps, insufficient close time, pollutions, destruction of unseasonable or of immature fish, the want of an organised system of protection, and confusion and uncertainty of the law, were the chief causes.' This was followed in 1861 by a Salmon Fisheries Act which was supposed to replace the old mish-mash of confusing and often contradictory bit-and-piece legislation, some of which dated back to the Middle Ages. It specified annual close seasons, made fish passes compulsory and harrumphed about pollution. The problem was that at local level it made no provision for anyone actually to enforce it. At national level, responsibility fell upon two newly appointed Inspectors of Fisheries answerable to the Home Office, Frederick Eden and William Joshua Ffennell.

It was against this endless churn of disaster, degradation and dwindling optimism that Frank went on researching, reporting and proselytising. Since his falling-out with *The Field*, he needed a new platform from which to report his findings and air his views. He had wasted no time in fixing one. Supported by the publishers Chapman and Hall, and backed by his friends Higford Burr of Aldermaston Park and William Joshua Ffennell, he now had a whole new magazine of his own. The first issue of *Land and Water*, launched as a competitor to *The Field*, was published on 27 January 1866, price sixpence. Frank's presence as a principal contributor and editor of the natural history pages guaranteed its popularity. His first words to his readers were the enfolding embrace of a shepherd to his flock:

> Let none think himself unable to advance the great cause of practical natural history. Thousands of Englishmen and Englishwomen have knowledge and experience, acquired

> by their own actual observation of useful facts related to animated beings, be they beasts, birds, insects, reptiles, fishes or plants. Friendly controversy and argument is invited on all questions of practical natural history, and although the Odium Salmonicum not unfrequently assumes more virulence than even the Odium Theologicum* of the good old days of faggot and stake, no writer need fear that his pet theory shall be ruthlessly set on fire, or that his arguments shall be decapitated, without fair and patient hearing.

In this he was true to his word. Readers were only too eager to send in their thoughts and observations, and Frank's lively exchanges with them were essential to the magazine's appeal. 'It would be hard to find more entertaining reading', wrote John Upton in *Three Great Naturalists*, 'than his answers to correspondents in the early days of the paper . . . He considered no trouble too great if he could impart knowledge to the public . . . When some snails were sent for his inspection, he carefully fattened them on lettuce, cooked them and ate them. He found them excellent – an opinion which the present writer can unreservedly endorse.'

Influential though Frank was, however, he had only the status of *enthusiast*, a brilliant cheerleader but powerless to be the all-conquering champion that England's rivers so urgently needed. He could not be satisfied with mere advocacy: he wanted to be the architect of events, to turn thoughts into actions. There was prophetic irony in the way the opportunity arose. Inspecting salmon rivers was physically demanding – too much so for one of the two

* *Odium theologicum* means literally 'theological hatred', or hatred caused by religious disputation. The joke *Odium salmonicum* was Frank's thinly veiled reference to the enmity of Francis Francis.

Home Office inspectors, Frederick Eden, who became ill and could not continue. Frank got wind of this from an old Oxford friend, the Financial Secretary to the Treasury, George Ward Hunt (a future Chancellor of the Exchequer), whose letter to Frank, dated 11 October 1866, survives in the scrapbook: 'Dear Frank, I hear there is just a possibility of a vacancy in the Fishery Inspectorship – I advise you to write a line to Mr Walpole* at the Home Office who has the patronage, asking him to consider your claims – I am going to him this morning to urge them but I recommend a formal application.' Frank did not need to be asked twice, and Hunt was as good as his word. Frank's diary entry for Wednesday, 6 February 1867 described one of the greatest days in his life:

> This day I was appointed Inspector of Fisheries. I had been invited to dine at the Piscatorial Society in St James's Hall, and was sitting on the left hand of the chairman (Mr Sachs), when John brought me in a letter as follows: 'Home Office, February 6, 1867. Sir, – Mr Walpole has desired me to inform you that he has much pleasure in appointing you Inspector of Salmon Fisheries in accordance with your wishes. I am etc, S. Walpole'.† – When I read this I felt a most peculiar feeling, not joy, not grief, but a pleasurable stunning sensation, if there can be such a thing. The first thing I did was to utter a prayer of thanksgiving to Him who really appointed me, and who has thus placed me in a position to look after, and care for, His wonderful works. May He give me strength to do my duty in my new calling! I said not a word to anybody, but in a few minutes I had to make a speech, to propose

* Spencer Horatio Walpole, the Home Secretary.

† The Home Secretary's elder son, also called Spencer Walpole, who served as his private secretary.

the health of the prize-givers. I alluded first to the cultivation of the waters, and then to my excellent father's endeavours to do good, saying it was my wish to honour his name, and do my own duty in my generation. I then read out the letter, which was received with great applause. Thus, then, I have gained the object of my life. Surely fortune favours me with great luck; and I am very thankful for it. When I got home I found the house in a state of uproar; all the servants, the monkeys, Danny the little dog, the parrot, and the cat, with paper favours on; M. and L. were also here with favours on, and all much delighted by my appointment.