

Preface

Mark had been preparing to write a book for several years but sadly died before he was able to do much work on the main text. He left a synopsis and it was clear from this that he was intending to redraft much of his older material, something he'd often done before when writing one-off articles. Although we didn't have any detailed discussions about the book, he said that if he didn't pull through the brain cancer he wanted me to complete it.

After Mark died, in November 2006, his publisher, Sevak Gulbekian, wanted to proceed with the project and we agreed the best way forward would be for me to work up Mark's existing material. I turned to a number of sources, such as his website, peer-reviewed articles, his BSE Inquiry statement, various articles by others about him and my own recollection of our discussions over the years.

I started from scratch on the Introduction, Afterword and Appendix. They're written in my own voice, apart from some personal contributions, including part of Mark's piece 'Tumerous Christmas' and material from newspaper articles by Bob Woffinden and Brigid McConville in the Appendix. I've shaped, edited and filled out Mark's chapters as I thought best, and the text is slightly coloured by my style.

I decided not to add numbered references to the text but instead listed some key papers and books for each chapter in the Principal Sources section. Anyone wanting precise references should look at Mark's papers relevant to the chapter and check out the references there. Many of these papers are available free on our websites: www.markpurdey.com and www.purdeyenvironment.com.

Mark and I both thought in very similar ways, so much so that often when we compared notes after some months apart we seemed to have travelled the same path, recognized the same problems and arrived at similar conclusions. I'd also worked pretty closely with

him, making a series of films and accompanying him on trips to Iceland, Slovakia, Italy, Sardinia and around the UK. All this helped in the preparation of the book.

He worked on many other diseases throughout his life besides BSE and CJD (the transmissible spongiform encephalopathies – TSEs) such as bovine TB, multiple sclerosis, Machado-Joseph’s and Guam syndrome. During the BSE years Mark was known as the ‘organophosphate’(OP) man, but in fact he thought it was unlikely that the OP used to treat cattle for warble fly was the sole cause of BSE, but rather it precipitated the epidemic through various mechanisms involving copper homeostasis and oxidative stress.

Mark felt compelled to embark on his own research because the causal explanations of TSEs offered from official quarters continued to be unproven and implausible. If they’d proved their case or even produced a convincing argument he’d have shut up!

He went out into the field to study the diseases in their setting in life and set about decoding the environment where they were clustering. From his analysis he was then able to draw up his key theoretical statements, about the multifactorial causal interplay of munition contamination, ferrimagnetic crystal pathogens – manganese (and later barium, silver and strontium) – infrasound and oxidizing agents such as OPs and UV light.

He was the first person to come up with all of these points and although his work has not been fully proved there is strong evidence that oxidation and metal metabolism, in particular copper and manganese homeostasis, is the key to understanding TSEs. For example recent research has shown that manganese is able to cause the misfolding of the key prion protein into its abnormal form and also to give a positive result in a key test for prion disease known as the prionics test. (See Principal Sources and Further Reading section.)

Mark’s research was limited in scope because it was largely funded by small donations from well-wishers and from his own pocket. He earned very little from any facet of his research work,

including spin-offs such as lecturing and writing. Compare this with the position of the authorities, which have had millions of pounds of funding and have had every possible advantage in terms of facilities and scientific teams to make their case – one which still fails to demonstrate Koch's postulates after over 20 years of research.

It was a constant frustration to him that no journalist ever raised the key flaws in the official theories, listed at the end of Chapter 1, 'A Warble Fly in the Ointment', with any scientist or politician. No one in authority was ever challenged with these vitally important questions. Apart from some moving personal testimonies the scientific and political debate in the media on BSE and CJD has been indescribably anodyne and largely irrelevant.

Mark wanted the results of his work to be of real benefit to the world and there were usually simple practical strategies to benefit sufferers that flowed from it. For example, it is so obvious that what the Aborigines on the island of Groote Eylandt, described in Chapter 5, 'To the Ends of the Earth', need is help to reduce their manganese exposure. They don't need any more high tech research into their genetic profiles because it doesn't help them with their disease.

So often he found aspects of mainstream medicine to be stuck in the inertia of status quo and he desperately wanted to blast this apart so that useful, very often simple and non-trendy strategies could be introduced. This is not to say he was anti-science (when properly focused he had nothing but praise for high tech medicine). He was interested in the truth, and if an idea didn't stand up to scrutiny he jettisoned it and was fully aware of how one can easily slip into biased pathological scientific views.

At the end of his life he was confident of his theory but realized he needed to design and commission some studies to prove it. It's very sad that he didn't have a few more years to do this. Despite having a large grass-roots following I know he was frustrated that few people in positions of power had listened or responded to any of his

findings; more often these people exploited him, which I suppose is the inevitable fate of the fundamentally decent guy.

I feel a tinge of sadness that he never got to see some of the more recent papers that support his position. He was the first person to come up with so many of these ideas and the first person to place them in the public arena, and my fear now is that if he's proved right he will not be credited. I hope that this book goes some way to put his vast contribution on record. He was a very creative and original thinker and when I was with him ideas just flowed from him constantly. I found him inspirational to work with and he taught me a huge amount. We'll all miss him enormously.

Nigel Purdey

London, April 2007

Introduction

Rebel with a cause

by Nigel Purdey

It was Christmas Day in 1953. I was two and a half years old and standing outside an ivy clad, pebbledashed nursing home in Broxbourne, holding hands with grandpa. Mum had got a very big tummy lately and she was inside having something done about it. Grandpa explained that I would soon have a brother or sister, but I wasn't interested and just wanted to be at home watching indoor fireworks and playing with my new train set. Next day mum came home with a small bundle of kicking, crying flesh, with a willy, and he was called Mark. I thought, perhaps this could be fun.

Mark and I grew up in a well-to-do household. Dad was a company director in the rubber business and a chartered accountant, but in his youth he'd been a semi-pro jazz pianist and had written comedy scripts to earn a living. Mum taught class music in the local primary school and was 100 per cent classical in her musical being, whilst dad was 100 per cent jazz.

On Saturday mornings dad would sit at our Boesendorfer baby grand in the hall and play a Count Basie style blues. He mumbled a lyric and beat out a wicked stride bass that drove relentlessly through the house, and vamped till mum was ready to go shopping; it was always a long blues. I would say Mark inherited the jazz gene from him and if this gene was at the root of his lateral creativity, then it was leavened slightly by mum's more sanguine genes.

Our parents were strict, quite formal and keen for us to learn etiquette, elocution and to mix in the right social circles. They'd met at a tennis club and were both very good players. Unfortunately we didn't inherit their interest in tennis, and this was a disappointment

for them. One year dad made it to Wimbledon, although like many things in his past he never spoke of it.

Our great-great-grandfather was James Purdey, founder of the Purdey shot gun dynasty and a man of considerable determination and perfectionism. Looking at the old family photos and drawings from Victorian and Edwardian times our ancestors belonged to the hunting, shooting and fishing set and often rubbed shoulders with aristocracy.

Mark wanted this book to be dedicated to our grandfather, Lionel Purdey, who was a bit of a rebel and didn't go to work in the family gun business. We think that he signed up as a private in the Army and served in the First World War until he got shell shocked in 1916. He campaigned to get shell shock recognized and it appears that he was sectioned shortly after this, into the Springfield Hospital in Tooting, South London, where he tragically remained until his death nearly 40 years later.

At the time his wife was trying to set up as a Royal dressmaker and designer, and she eventually opened a successful shop in Sloane Street called 'Madam Eileen'. In his youth Lionel had been quite awkward, and what with his shell shock and campaigning it seems that his wife considered he was too difficult to handle and a liability to her career prospects, and this may have influenced the hospital admission.

I can't be sure that Lionel didn't need or benefit from hospitalization but once at Springfield he seems to have been totally cut off from his family and friends, because he was considered an embarrassment.

He was never spoken about in our house and we didn't even know we had a paternal grandad, until one day in late 1958 dad brought a small collection of personal effects – some socks, a razor and a hairbrush – into the bedroom and put them in his walk-in cupboard. Mum said something about them belonging to our late grandfather and it was left at that.

It was a chilling and pathetic image because this was Lionel,

contained in these few personal effects, summarized in a few hospital notes – someone who would never really be part of anyone’s personal memory. His existence in the later part of his life was effectively wiped of real relationships.

A few years ago, in one of those curious quirks of fate, whilst Mark was in the US lecturing, he happened to meet a woman who had come across an old photo of Lionel as a young man taken on a farm in Kansas. She’d been particularly struck by his charismatic looks and had researched the picture. She found out that Lionel was part of the Purdey gun family and had been a shell shock campaigner. After spending years trying to piece together his life story, one day his grandson Mark appeared. She then found out the tragic end to the tale, but at the same time she must have found some resolution to her quest to understand Lionel’s life through the chance meeting with Mark.

We grew up in the Hertfordshire village of Much Hadham, in a large listed house, which was neat and well decorated and had a big enticing garden. From an early age we explored its nooks and crannies and built camps and tree houses. In the fields beyond we played in the streams and charted new domains in the farmland that stretched for miles.

We were both sent at the age of eight to a boarding school called Forres in Swanage, nearly 200 hundred miles away from home. It was a tough place, and I remember it as always grey, with harsh pebbledashed elevations, battered by the sea winds and perched on a hill in that grey stone town. I rather like Swanage today.

Some of the teachers had a neat way with sadism; sensitive children like us found it hard to survive. The headmaster’s technique for the extraction of mathematical answers was by a twelve-inch wooden ruler, which he’d beat progressively harder behind our left knee as we stood beside his desk. If you fumbled over an answer you would see his right hand slowly manoeuvring into the beating position – he’d deliberately draw out the foreplay, taking aim slowly, so that you would suffer all the more. And then thwack!

– the familiar sound of wood on flesh in English boarding schools. His strategy was to instil fear, as if by doing this he would somehow enable you to calculate the correct answer more quickly. Of course it had the opposite effect; you got progressively more flustered as the frequency and intensity of the beat increased. But when I looked into his weather-beaten and humourless face after he was done, I just saw the despair of an isolated and frustrated bachelor.

Children in those days had no power to question or complain, and our sense of injustice just turned inward and festered behind a closed mouth. Mark and I both developed contempt for this type of system. These early experiences led us to have a deep distrust not only of formal education but also of authority in general. We both naturally found an affinity with auto-didaction.

In the attic storey of the school there was one magical room where we were allowed to pursue hobbies, such as art and natural history. Here we could escape and discover treasures in abundance. We found the musty collections of beautiful mottled bird's eggs, and moths and then the butterflies, delicately crucified, with wings like miniature abstract expressionist diptychs, pinned in shallow mahogany drawers – quite unacceptable to today's sensibilities, of course.

Mark's interest in the natural world began here, and at about the age of ten he started bird watching and collecting eggs, butterflies and fossils. He channelled his passion into natural history, which offered him an imaginative foundation as well as a value system he could trust, in contrast to the cold regime of school. He inspired our father, who gradually developed into an obsessive bird watcher and bird photographer himself.

On Sunday afternoons at school we had another release in the form of walks in which we explored much of the brooding landscape around the Isle of Purbeck – Ballard Down, the Tilly Whim caves, Chapman's Pool, the Jurassic coast, Durdle Door and Corfe Castle. They were all to seed in our imagination a deep love of landscape.

At home the collection of specimens grew steadily and Mark eventually took over most of our bedroom with a museum, centred on a three and a half metre long mahogany glass shop display case, which we bought in a junk shop in Westmill. It was soon filled with fossils – a huge ammonite, which is still in our garden to this day, geological samples, and assorted goodies such as sharks' teeth, animal skulls, bones and birds' eggs.

But an incident around this time was to have a deep impact on Mark. One summer day when he was watching birds in the fields beyond our garden he'd seen a plane spraying pesticides on the wheat fields. He later recalled: 'Soon afterwards I saw a blackbird quivering and dying at the edge of the field. That image affected me deeply and still haunts me today. It raised many questions in my mind about why this spraying was going on and what was it really doing to the environment.'

We both went on to a local public school called Haileybury and Imperial Service College. It was the sixties and things were loosening up in the real world outside, but public school lagged behind. 'It was all very militaristic and archaic,' Mark recalls. 'My education led me to question authority.' One of his school friends, Robb Bradstock, gave me his recollections of this time.

My first memory of Mark is from when I was 13. We both sat next to each other in the same class, taught by my father, and for some reason Mark used to stir things up by declaiming the names of rock bands – 'Jethro Tull! Ten Years After!' No one in the class knew who was doing it and I really relished this bravado, although it was embarrassing when he did it in my father's class. Mark was just totally driven to subvert things. In RE he was more cooperative and wrote amazing essays on the philosophical questions posed by aspects of religion, which really impressed my father, who used to comment, 'Where *does* he get it from?'

I had considerable family problems and left school at 16, but Mark and I kept in touch. He was always breaking out of school at

nights and he would hitch or walk to meet me in the Golden Lion pub in Hoddesdon. We would drink illicit beer (not to excess) and talk of setting the world to rights. We were aware of issues such as pollution and the environment, but few people seemed to take any notice. There was still plenty of fresh air and not too much carbon dioxide about in those days.

At closing time we would sometimes move on to the woods near my home and light a bonfire and sit around till the early hours playing music, talking and drinking. Mark would then have to sneak back the three miles to school, but somehow he never seemed to get caught.

We also met up for the classic Sunday rock concerts at the Roundhouse in London and saw bands such as Ten Years After and Fotheringay, before they were well known. One night after a concert we missed the last bus and had to sleep in an open garage in a Camden back street. Mark, who used to take his sax and flute with him everywhere in those days, used his sax case as a very hard pillow! My home life was awful at this period and, after gaining some inspiration from reading *Down and Out in Paris and London* by George Orwell, I ran away from home. Mark had told me about a soup kitchen in the crypt of St Martin's in the Fields and I headed there. He became 'my spy' at Haileybury and after I'd been gone a couple of days he phoned to tell me that the police had interviewed him about my whereabouts. He assured me that, although put under extreme duress, even to the point of torture (he really liked to wind me up!) at the police station he hadn't cracked or divulged my address.

We often went travelling together with other friends and on one occasion after being chased by the police on a Cornish beach we somehow ended up in Bath, where Mark encouraged me to buy a clarinet in a junk shop. He taught it to me for a few months and we went on to form an eclectic folk/rock band called Lonely Air, which played songs Mark had written about Ireland.

He really seemed to understand how hard my childhood had

been and was very sympathetic and caring, which really made up for the horrible experiences at home. He had such a great sense of humour and would bring me out of my depression with his crazy stunts.

The summer after I'd left home he told me a lot about Ireland and being hooked I went over on the Cork ferry to meet him under the clock tower in Killarney, but he never made it. Later that year I visited him in Much Hadham and found he'd built a little sawdust kiln in the garden and was making very simple pots of clay from the bed of a local stream. This was my first experience of pottery and it inspired me to go on and study the craft and start my own pottery business near Macroom in the West of Ireland.

During our early teens we rediscovered the landscape experience we'd had at prep school. There was something about the meeting of history, colour, order and wildness in landscape that gave it a power to symbolize your inner being. It held up a penetrating mirror that showed you the deeper parts of yourself. It drew us in and hooked us.

One of the most memorable of those experiences was discovering the valley of the River Rib, about three miles across the fields behind our house.

On a baking July afternoon, just home from school, we walked off to the valley for the first time, following the footpath until we reached Barwick Ford. We then took the track to Latchford and strayed into an enticing wood just off the path. As we fought through the arches of dense trees we could just make out the ghostly shape of a building hunched into the bermed earth. It was like a simple croft cottage, but had thick concrete walls and had lost its roof years before. We couldn't imagine anyone living here and wondered what it was doing in the middle of a wood. The whole place had an uneasy but alluring silence. We pushed on through the interlocking arms of saplings, coming upon several more of the

buildings and an unusual large concrete pool, which was choked with algae and buried under rampant branches. A grass snake splashed and writhed in the black water and swam away, disappearing into the undergrowth beyond. The darkness of the place was claustrophobic and we were relieved when we finally broke out into the fresh air of a magical sunlit glade. We returned there later that summer to wild camp and follow the gentle winding river below the wood. A few years later we discovered that the wood was the site of a gunpowder factory, which had been active during the Second World War.

Munitions seemed to form a leitmotif that connected various stages of Mark's life. Mmunition contamination was to emerge in his later research as the key to the way he understood the cause of several diseases.

Another munition incident from early childhood occurred when we were digging a pit in the garden and we'd unearthed an extraordinary cache of Second World War munitions. There were a couple of grenades, several rounds of 303 ammo and shell case. We cleaned them up and showed them off to Hadham's junior gangland culture. We were Godfathers after that, but within a few days dad discovered the armoury, the police were hastily called and our cache (and street cred) were removed.

A new outlet for Mark in his teens was music. Inspired by prog rock, folk and the new jazz of Soft Machine and John Surman, he taught himself the sax, flute and double bass. This led us to put on the Much Hadham Folk Festival for two years running in the back garden of the Red House, with all proceeds going to charity.

The first year was chaos – we made up a rickety stage from scrap planks and borrowed some rather dodgy PA equipment at the last minute, as Mark had forgotten to organize anything. We had also forgotten the mike stands and ended up improvising with a fishing rod, a broom handle and a bamboo cane and string. Unbelievably we also forgot to provide loos and drinks – luckily the Bull pub next door obliged on both counts.

In contrast the second year's festival was quite slick and professional. Gordon Giltrap headlined, with many excellent local acts in support and we had a rather good collection of PA equipment brought by the artists. The pub organized a drinks bar underneath the yew tree and we dug some primitive loos near the kitchen garden, astutely realizing that this juxtaposition could have some useful fertilizing implications.

Somehow our rather straight-laced parents coped (actually, I'm sure they secretly enjoyed it). Picture hordes of rather hippyish, stoned teenagers queuing up for the one downstairs loo in an impeccably furnished and decorated Georgian house. Well this is what mum and dad put up with. With around 250 people turning up, the garden heaved and, who knows, if we'd carried on for a few more years one of us might have become Hertfordshire's answer to Michael Eavis.

We spent several evocative family holidays in western Ireland at Inch and Castletownsend, where I endured a terrifying encounter with the ghost in the Castle guesthouse. Twenty-five years later I heard a radio documentary about the connection of the writers Somerville and Ross to Castletownsend and the castle, which they described as Ireland's most haunted place.

Mark fell in love with Ireland's unpretentious simplicity, its history and the natural power of the place. He came to admire much of the Celtic tradition from its music to the poetry of W.B. Yeats. During one of these holidays I remember he'd dragged us all along, on a wet day, to the Coosheen copper mine in County Cork, because he wanted to collect samples of copper ores. If I recall correctly, this was not a popular choice with the rest of the family; nevertheless he got his way. He disappeared for hours collecting rocks whilst we sat and had a picnic in the car park – British style. The mine was worked between 1840 and 1907 for various ores – cuprite, malachite and tetrahedrite. I believe it's now become a golf course.

As a result of this first foray into researching copper, we wrote a

song together – Mark wrote the words and I wrote the music. The chorus went:

*O they all came from Coosheen
A hundred years ago,
With a knowledge of mining
that green copper ore.*

At about this time he started to become interested in ideas, particularly about the environment. He read Rachel Carson's *Silent Spring*, which galvanized him into his life's path. He wore John Lennon specs (which, like Lennon, he hated wearing), grew long flowing hair and generally cultivated a proudly scruffy, organic look.

He started developing the kitchen garden at the Red House as an experimental organic project. At the time we had a stalwart elderly gardener, called Walter Smith, who I don't think agreed with all of Mark's new-fangled organic gardening methods. Smith must have watched in disbelief at the young novice taking over and developing his kitchen garden. Most of the time Smith tactfully kept away, although we all knew he was itching to get stuck in and criticize Mark's methods. I think Smith was somewhat bemused as to why Mark had taken over the growing of the veg for the house when he was quite capable of doing it himself.

One night when Mark was climbing a wall to get back into school after one of his Hoddesdon all-night sessions he was caught by a master and promptly expelled.

After school he took a series of jobs, first labouring at a local plastics factory and then doing agricultural work in the Suffolk fens, where he lived in at an experimental farming and social commune. We also both did a stint as labourers at dad's rubber factory in St Albans.

Mark then moved away to another live-in job on a farm, which was in the process of converting to organic status, by the River Severn near Chepstow. During his time there he had to do some

spraying with a pesticide which affected him badly. He went downhill quickly, becoming quite disorientated and withdrawn, and left the job.

He later turned down a place at Exeter University to read zoology and psychology. Instead he decided to set up an experimental organic farming community on the west coast of Eire. This didn't work out and he came back and settled in Pembrokeshire, where he married at 20, became an organic dairy farmer and had two children. The marriage broke up after three years, but he eventually settled down in the early eighties with a new partner Margaret, with whom he had six children and whom he married in 2006.

Mark's love of Ireland was to inspire him into improvising long bedtime stories for the children. He invented a cast of characters based on a mischievous young Irish girl called Mary O'Shea, her dog Holly Laws and their trusty sidekick, the Gannet, which had extraordinary magical powers. When I was there I often joined in by improvising different parts. The stories, which would often go on for hours, would verge on being small theatrical productions creating mayhem at bedtime. We definitely had as much fun as the kids did. He eventually wrote some of the stories down but never got round to getting them published.

Mark had a particular affinity with Jersey cows; he had started out with a single animal and gradually built up his herd. In the early days the growing family were squashed into a series of caravans, whilst the cows were put first and often seemed to have better accommodation than the family! In 1997 one of their cows achieved the highest recorded UK milk yield for the Jersey breed.

Besides milking Mark branched out into swede production, once spending a whole winter pulling the veg between milking. Every day he'd have to drive the swedes to Bristol, or sometimes London, in an ancient 30 cwt hired van. The rewards were not great in this business and when the axle on the van finally broke this provided a good excuse to stop.

The family had no car for several years; they used a tractor

instead. Mark took Margaret to her first antenatal class on the back of his Leyland tractor. Margaret was so embarrassed by this she never went back again. The day she went into labour she drew the line at the tractor and insisted that Mark should borrow a car to get to hospital, but it broke down after only a few miles (they should have stuck with the tractor). Mark insisted on hitch-hiking the rest of the way, hoping that someone would take pity. They did.

By the 1980s their dairy farming business had become quite well established but a change in the law in 1982 led to a requirement in their area to use a powerful organophosphate pesticide to treat cattle for warble fly. This raised many issues for Mark as an organic farmer and he didn't trust the view of the Ministry of Agriculture that this pesticide was safe to use in the way it was decreed. A deadlock ensued between Mark and the Ministry, which ushered in the next chapter of his life.