Beyond Paradise:
The Wildlife of a Gentle Man

a play by **Sean Street**

First Performed Salisbury Playhouse
September 1998,
Subsequently toured annually, 1999 – 2010 by Dragonfly Productions,
Christopher Robbie as Charles Darwin

Time: The late 1870's,with flashbacks to earlier times in Darwin's life. As storyteller he is as he would have been at the age of about 68.

Place: the Dining Room at Darwin's Kent Home Down House.

Set:

A Desk, a chair, an armchair
A Coat stand

Props include:
A shotgun
Writing materials
A fur coat
Microscope
Journals: 1870's editions of the Spectator and The Dublin Review
Lectern with Diary

Part One

Aha! You are here! Emma said you would be! Dear Emma, she's usually right! She did tell me you were expected. But you know my mind is so full of this and that, that the 'thems' and 'those's' get rather sadly neglected. Do please forgive me! I wasn't very far away - my son Francis and I were outside, talking to the worms. Well, observing really - they're not very chatty creatures, worms. Nevertheless they are my latest obsession. Did you know that over a period of one year the earthworms in an acre of land will carry up to the surface 18 tonnes of earth? And because of this they become the principal agent in the burial of the past - which we then ask archeologists to rediscover! I'm going to write a book about it. I shall call it "Formation of Vegetable Moulds through the actions of Worms". Fascinating, don't you think? Ah well, I'm sure you didn't take a carriage all this way to hear me rumble on about worms! Emma tells me you are keen to know how it all began - how and why I came to write and to publish my 'Abominable volume'. Well, there is indeed a tide in the affairs of men. . . and I experienced it!

I'd been a pupil at Shrewsbury School...and not made much of it. A very ordinary boy, that was me. Very ordinary. . . my father, Robert Darwin, who was, I must tell you, a country doctor of considerable repute - and, I might say, considerable presence - six foot two inches tall, and twenty three and a half stone, - not as large as my grandfather, Erasmus, though - he had had to have a crescent cut out of the dining room table to accommodate his girth - so take care Charles! Anyway my father decided I should attend Edinburgh University and study medicine - like father like son. So I did. Only to discover that I fainted at the sight of blood! I was disgusted by anatomy, and bored by just about everything else. So I didn't make much of Edinburgh either! Except that whilst there I came friends with William McGilvray who was curator of the Natural History Museum. With him I was able to channel my learning energies into what I was beginning to understand was my deepest love - Nature! Back at Shrewsbury - in fact even as a very small boy I'd been an avid collector of stones and shells and beetles and butterflies. . . And

now the joy and satisfaction I was getting from pursuing these interests - and in the company of men who were devoting their lives to the study of these sciences - made me confront what deep down I suppose I had always known. . . that I was no a physician by temperament or inclination. My father as you may imagine was not please by this development. I seemed to him to be drifting aimlessly, the way of a wastrel.

"There is no future in Beetles!" - I can hear him now! So he decided I should have another career - in the Church! By way of Cambridge University. I was accepted at Christ's College - Trinity wouldn't have me. And it was here my life changed, for it was here that I met the man who became the architect of my life as a naturalist; John Henslow, Professor of Botany - and also a clergyman.

We would go together on long botanising walks and boating excursions along the Cam, and during my last year at Cambridge I became known - somewhat reverently I think - as 'The Man who walks with Henslow"! He was a man of infinite patience - a wonderfully wise and diplomatic teacher

He Chuckles,

I remember on one occasion rushing to him to show him some great botanical discovery I'd made, he agreed very seriously how very interesting the phenomenon was, and explained its meaning, but made me clearly understand how it was already very well known. But I left him not in the least mortified, but pleased that I had discovered for myself so remarkable a fact, but determined never to be in such a hurry again to communicate my discoveries! It was Henslow too who encouraged me to study Geology. And it was through him that I met Adam Sedgewick, president of the Geological Society and Professor of Geology at Cambridge.

Sedgewick was due to make a geological expedition to North Wales, and Henslow persuaded him to take me along. . . What an honour! Me, with only youthful enthusiasm to offer! Whose field work was negligible. But Sedgewick treated me like a partner, sending me off to bring back specimens of rocks and to mark the stratification on the map. I remember telling him one evening of a labourer who had found a tropical shell in a gravel pit near Shrewsbury. I asked him how he thought it came to be there? He said that someone had probably thrown it there. But then he said something I shall always remember.

He assumes the character of Sedgewick

"If it really were embedded there, It would be the greatest misfortune to geology. Why? Because it would overthrow everything we know about the superficial deposits of the Midland counties."

He is himself again.

At first I was surprised at this but then I realise what he was saying; such a fact would undermine all the current geological hypotheses. Everything would have to be re-thought! It was perhaps then - at that very moment - that I started to understand that whatever conclusions a natural scientist reaches, they must always - always, always, always - be educated by the FACTS!

It was at the end of this field trip with Adam Sedgewick that I returned home to Shrewsbury to find a letter waiting for me from Henslow.

He picks up a letter, reads it as Henslow.

"I have been asked to recommend a naturalist as companion to Captain Fitzroy, employed by

Government to survey the southern extremity of America. I have stated that I consider you to be the best qualified person I know of, who is likely to undertake such a situation. I state this not in the supposition of your being a finished naturalist, but as simply qualified for collecting, observing and noting anything worthy to be noted in Natural History. The voyage is to last two years. Don't put any doubts or fears about your disqualification, for I assure you, I think you are the very best man they are in search of. Your affectionate friend,
JS Henslow. . . PS. The expedition is to sail on the 25th of September at earliest, so there is no time to be lost" The letter was dated the 24th of August 1831.

He puts the letter slowly down, become himself again.

I couldn't immediately digest its contents. He was inviting me - by his own definition an unfinished naturalist - to voyage for two years to the far corners of the globe to collect, observe and note anything worthy to be noted in natural history. I was twenty two years old. It was the most extraordinary and wonderful opportunity. But what of the future that had been planned for me? A quiet country living in some rural parsonage? What would my father think?
As I suspected, my father thought it to be 'a hair-brained scheme'. But to be fair he did say that if I could find any man of common sense to advise me to go, he would give his consent. I went at once to see my Uncle Josiah Wedgewood a short ride away at Maer. And how different was his reaction to Henslow's invitation from my father's! He agreed to return with me at once and to confront my father in his study - I remember how he countered the objections, one by one.

He assumes the characters, first of his father, and then of his Uncle

(My Father): "It will be disreputable to his character as a clergyman hereafter".

(My Uncle): "I should not think that it would be in any degree disreputable to his character as a

clergyman. I should on the contrary think that offer honourable to him, and the pursuit of Natural History, though certainly not professional, is very suitable to a clergyman!"

"It is a wild scheme"

"I hardly know how to meet this objection, but he would have definite objects upon which to employ himself and might acquire and strengthen habits of application just as much as he would were he to pass the next two years at home."

"He will never settle down to a steady life thereafter."

"Well, Robert, you are much better judge of Charles's character then I can be. If, on comparing this mode of spending the next two years with the way he will spend them if he doesn't accept the offer you think him more likely to be rendered unsteady and unable to settle, it is undoubtedly a weighty objection. . . . By the way, it is not the case that sailors are prone to settle in domestic and quiet habits?"

"He should consider it as AGAIN changing his profession".

"If I saw Charles now absorbed in professional studies I should probably think it would not be advisable to interrupt them. But this is not, and will not be, the case with him. His present pursuit of knowledge is in the same track as he would have to follow in the expedition."

"It is a USELESS undertaking."

"The undertaking would be useless as regards his profession. . . but looking upon him as a man of enlarged curiosity - it affords him such an opportunity of seeing men and things as happens to

few."

He resumes himself.

My father capitulated. His love of Uncle Jos., and deep respect for his views allowed him to offer me his approval. . . and just as important his full financial assistance. He could be gruff - my Father - but he was always fair - and he loved me dearly.

So I hastily wrote to the Admiralty belatedly accepting the invitation.

And then, of course, I fell to pondering. I shall never forget how very anxious and uncomfortable the ensuing days were. My heart appeared to sink within me, irrespective of the doubts raised by my father to the scheme. I could scarcely make up my mind to leave England for the time which I then thought the voyage would last.

But the die was cast. On the fifth of September - How I remember that day! - I travelled to London to meet Captain Robert Fitzroy of the *Beagle*. Fitzroy. . . born in the year of Trafalgar, and with him I was to exchange hunting foxes in Shropshire for stalking Llamas in South America! It's hard to recapture my feelings on that first meeting. So much has happened since. But I have here an extract from a letter I wrote to my sister Susan at the time:

"Let me tell you about Fitzroy. He must be no more than 26 years old, of slight figure, dark but handsome, and according to my notions, of pre-eminently good manners. He is my *beau ideal* of a Captain!"

Mind you I do remember being taken aback by his obvious reluctance to greet me at first with any form of enthusiasm. Because, it turned out, he did not approve of my nose! He thought it

showed signs of a lack of energy and enthusiasm. Happily we soon overcame that obstacle! And the good Captain soon proved to be everything that is delightful. Though not much my senior in age, in experience he was far ahead of me. He had already been Captain of the *Beagle* for two years. During the years ahead I was to find him devoted to his duty, generous to a fault, bold, indomitably energetic, and ardent friend to all under his sway. I was also to discover his quick temper, and his equally quick remorse. At Plymouth, before we sailed, I remember he was extremely angry with a dealer in crockery who refused to exchange some article purchased in his shop. Fitzroy asked to man the price of a very expensive set of china laid out on a shelf and them told him:

"I'd have purchased that if you hadn't been so disobliging".

Well, I knew his cabin was amply stocked with crockery, and I couldn't imagine he really needed more. Outside the shop he must have noticed my doubt

As Fitzroy

"You don't believe me do you? You don't think I meant to buy that crockery. . . Well. . . you're right of course. I suppose I acted wrongly. . . But I was angry. The man's a blackguard."

He resumes himself

I grew to admire Fitzroy - and to like him... though perhaps never - quite - to love him. We came, of course, from quite different social backgrounds. We were opposites - and perhaps because of this we seemed to suit each other. Anyway, on that very first meeting in London he made it clear that he would be happy for me to be his naturalist.

From that moment, life became frenetic. I dashed around London gathering all the various goods and chattels I should need for the voyage, including a brace of pistols - Fitzroy had told me there were many places it would not be safe to go ashore unarmed. . . The thought did occur to me that perhaps a certain skill with guns was the only expertise I was taking with me aboard the *Beagle.* I had been shooting since a very young boy. Oh yes, I was quite a sportsman.

When I was at Cambridge just about the only scientific records I kept properly were in my game book. And there were the shooting parties on my Uncle Jos's estate. . . and on the estate at Woodhouse of our neighbour, William Owen. Woodhouse was a sort of paradise, for Mr Owen had two beautiful daughters, Sarah and Fanny...they were the idols of my adoration. But in the end, it was Fanny I loved. Dear Fanny! She was to me the prettiest, plumpest, most charming personage that Shropshire possessed. But she could be wilful, indeed she could! I remember she once picked up one of our guns. I mean, women never - well rarely - went shooting. . . . I can still see the toss of her head, the fire in her eyes, when she insisted on firing off the gun. . . the kick nearly bowled her over and it must have hurt her for it made her shoulder black and blue, but she gave no sign at the time! - She showed me later. Ah, yes - guns and hunting - very much part of my youth - what memories they can bring flooding back.

He dreams, then rouses from his reverie.

Now then where was I? Oh yes, my preparations for the voyage. It was the guns wasn't it? Buying the guns took me back.

So - goods and chattels and guns purchased - it was off to Plymouth to see HMS *Beagle.* THAT was a shock!

She was a wreck! (OR so she seemed to my non-seafarer's eye!) And so SMALL! (She was in

fact only ninety feet in length and twenty five feet at her widest!) She was in dry dock that day and Fitzroy, obviously sensing my feelings explained.....

As Fitzroy

"She's in the process of being completely refitted; much work is being done to her to make her suitable for such an extensive voyage. . . and more seaworthy".

More seaworthy?

I was to learn later that this class of ship had earned the title of 'Coffin Briggs' on account of their tendency to capsize. . .

I must say though that all my doubts about putting to sea in that craft quickly evaporated when I saw her a few weeks later from a high point overlooking the harbour. All the new structural work had been completed, the masts rigged, the new paintwork was flashing in the sunlight. I stood gazing down at the beautiful symmetry of her - she who was to be my home for the next five years.

But before that adventure could begin, I had to travel back to Shrewsbury - to bid my farewells to my father and to my sisters. . . and to Fanny Owen. But she wasn't at home! She was away - visiting friends.

I returned to Plymouth. And after weeks of frustration caused by the weather, the great voyage eventually began. The 27th of December 1831. We had aimed to sail on the 26th - but as my diary reads:

"The opportunity has been lost because of the drunkenness and absence of nearly the whole crew. Some have been flogged for their insolence, other have been treated with more charity - and simply placed in leg-irons for eight to nine hours. And, at last, today we have sailed out of Devonport. With every sail filled by a light breeze, we have scudded away at the rate of seven or eight knots an hour. I have not been sick yet. . . Nevertheless I shall go to bed early". And I did. But not before reflecting for a while on deck - as the ship's business bustled around me - I seemed to be watching my past fade from me even as the land faded - whilst before me an unknown loomed"

The next morning my first concern was to organise the space allotted to me in the Poop Cabin. Let me try to give you some idea of the space I had where I was to do all my living, dressing, my work, my reading, my thinking. . . and my writing.

He marks out the area of his living quarters

The entire cabin, when I first saw it, measured something of eleven feet in width. . . empty. Into that had been added book shelves, instrument shelves and banks of drawers. And in the centre of the area was the map table. That was six foot six in length and four foot six in width. Which left about two feet of walking space around the edge! Ah, but I should explain that the Poop Cabin wasn't just MY cabin! No, I was to share it with Lieutenant Stokes, who's assisting Fitzroy with the survey work the *Beagle* is undertaking. He required half the use of the map table. At night we each had to sling our hammocks over the map table opposite each other, with about two feet of clear space between our heads and the top of the deck. Sheer Luxury!

So there we were. That is the space in which I had to live and carry out all the study, analysis, taxidermy and preservation which it was going to be necessary for me to do. At first it seemed it would not be possible to live for the duration of such a voyage in such hideously cramped

conditions. And even as we set sail there was confirmation that it had been extended from two to three years. But you know, as the journey progressed, and my time became so fully occupied with my tasks, I discovered that a ship is singularly comfortable for all sorts of work. Everything is so close to hand, and being cramped make one methodical. So that in the end. . . I became the gainer!

I even became quite an expert at climbing into my hammock. . . but not before reducing Stokes to tears of mirth at my early landlubbers' attempts. . . In fact during those first days at sea I spent more time in my hammock than anywhere else because I was suffering most terribly from seasickness. Fitzroy and the crew were kind and assured me that it would soon pass and that I would gain my sealegs. . . Regrettably they were wrong. I was laid low at regular intervals throughout the whole voyage. . . My father had advised a diet of biscuits and raisins in the event of sickness. . . So there I was swinging in my hammock, munching on biscuits and raisins and trying at the same time to get on with some reading. Fitzroy had sent me, before we sailed, the first volume of Charles Lyell's "*Principles of Geology*", which had only just then been published. It was ironic really that he had given such a book; had he read it first I think it unlikely that a man of his religious convictions would have found it acceptable.

In only the short time I'd known him I'd become aware of his faithful belief in the Biblical account of the Creation. I was also aware that as far as Fitzroy was concerned, part of the reason for my being on board was to find the Geological evidence for the Genesis story and the flood. But as I swung in my hammock being nourished by not only biscuits and raisins - but the rich feast of Lyell's book, it became clear to me that he was not addressing how the earth had been created, but how it had changed. Now you must remember that I was not only an "unfinished naturalist" as Henslow had called me, but also a "hardly begun" geologist. And so perhaps I was reading Lyell's "*Principles*" at just the right moment. It was teaching me a way of thinking and, ultimately, a way of seeing that was not fogged by previously acquired geological rules. I

learned through Lyell of the Aeons of time during which the Earth had been developing. And how consequently the changes were almost imperceptible. And it was this realisation of the millennia involved in the Earth's development - maybe fifteen thousand million years - that allowed me to conceive my 'theory' in the years ahead.

More immediately I was about to leave my hammock for Terra Firma, thank heavens! And the brilliant colours of tropical South America. The delight of that experience quite bewildered my mind. . .

Time shifts, The Sound Design Paints a tropical forest picture. Darwin looks about him in wonder.

If my eye tries to follow the flight of a gaudy butterfly, it is at once arrested by some strange fruit or tree. If I begin watching an insect, I find myself forgetting it in the strange flower it crawls over. My mind is a chaos of delight! For the first time I see the glory of tropical vegetation. Tamarinds, Bananas and palms - all flourish at my feet. I have read the descriptions of such places and I was afraid I would be disappointed. . . How vain that fear is! No one can tell but those who have experienced it what a day I have had! Such flora! It is not only the gracefulness of their forms or the novel richness of their colours - it is the numberless and confusing associations that rush together on the mind and produce the effect. . . Hearing the notes of unknown birds and seeing new insects fluttering about still newer flowers. . . It has been for me a glorious day - like giving eyes to a blind man. When I walk in the cool of the Forest, the silence and stillness - overpowering! It is like feeling the presence of God in a great green cathedral. . .

And sometimes it is possible to imagine the plight of Noah!

I wonder if my appetite for all the things of nature could ever be so satiated in a single day again?

Time shifts, the sound fades

Then I return to the ship to make sense of the scribbled words that spilled off the pages of my notebook. And waiting for me there... was a letter from my sister Catherine.

He clasps letter

She writes to tell me that Fanny Owen.... my dear Fanny... the prettiest, plumpest, most charming personage that Shropshire possesses - is to be married - will now be - married.

That night - perhaps the two incidents are connected - I had a violent quarrel with my "*beau ideal*" of a Captain.

Fitzroy had spent the day with one of the great landlords of the area, whose estates were run, as was the custom, by regiments of slaves. During dinner, Fitzroy remarked:

"All those slaves looked contented enough! All well fed as far as I could see. I questioned the landlord as to whether they would have preferred to have had their liberty? Whereupon the great man summoned some of these servants and asked them if they were happy with their lot? And they replied that they were."

"Fitzroy, you seem to accept their response as a justification for their servitude. Do you in any event truly believe that the answer of a slave in the presence of his master is really worth anything?"

"Get out of my cabin, Darwin! And never come back, do you hear me?"

So I left - you might say I scuttled away! Like a ship's rat.

The fury lasted a couple of hours, and then he showed his usual magnanimity by sending an officer to me with an apology - and a request that I should continue to live with him. And in no time at all we had resumed our easy relationship. But the incident made me aware that Fitzroy's background, being so very removed from mine, had given us some fundamental differences in our views on social issues and slavery was one of the principal of these. But it was not my place - as a guest at his table so to speak - to exacerbate these.

Seawash - Darwin is overcome by seasickness

Oh! If it was not for sea-sickness the whole world would be sailors! But then what fools these sailors make of themselves! It was - I think - only my friendship with Fitzroy that saved me the worst excesses of crossing the line. Nevertheless I could not escape altogether the indignities the equator brought with it.

What scenes! My first impression of this celebration was that the ship's crew from the Captain downwards had gone off their heads. Neptune was surrounded by a set of the most ultra-demoniacal looking beings that could ever be imagined. Stripped to the waist, their naked arms and legs bedaubed with every conceivable colour which the ship's stores could turn out, the orbits of their eyes exaggerated with broad circles of red and yellow pigments, these demons danced a sort of nautical war dance, exulting in the fate awaiting their victims below.

They lathered my face and mouth with pitch and paint, and they scraped some of it off with a piece of roughened iron hoop. Then there was a signal of some sort and I was tilted head over heels into the water, where two men ducked me. When, at last I escaped. . . the whole ship was a shower bath, water was flying about in every direction. Not one person - not even the Captain

- got clear of being wet through. . . I found the whole watery ordeal. . . Sufficiently disagreeable!

But we had crossed the equator and were on our way. . . to Patagonia!

And in Patagonia I visited Punta Alta. . . and at Punta Alta I found the fossilised remains of a Megatharium. . . a forerunner of the giant sloth, you might say, a prehistoric Armadillo. . . The head was embedded in rock. . . it took me nearly three hours to prise it out!

I mention my Megatharium particularly because he became a good friend to me. Although further visits to Punta Alta yielded more of the fossilised testament to prehistoric creatures, it was my Megatharium that made the people in London take notice of the geologising and natural history study that I was doing thousands of miles from home. You see, whenever we reached a suitable port where ships were bound for England, all the specimens I had collected were crated up and sent home to my mentor, John Henslow. It was a long process of course, it took three or four months to get back and then another three or four months before I had back any response. But when I did hear back from Henslow on receipt of my Megatharium I learnt - I must confess to my complete amazement - that it had been exhibited at the third annual meeting of the British Association for the Advancement of Science, presided over by none other than my geologising colleague from that Welsh field trip, Adam Sedgewick!

I say I was surprised - not through some foolish attitude of modesty but you must understand that at that time I had to regard myself still as a very naive geologist. I didn't have one clear idea about cleavage, stratification, lines of upheaval. . . And what I'd learned from the books I had with me I could not apply to what I saw. In consequence I had to draw my own conclusions, and I thought they were often most gloriously ridiculous ones! I was isolated you see? I was alone . . . So to hear from Henslow that such an eminent figure as Sedgewick was promoting my discoveries was astonishing - but wonderfully encouraging - news.

Sea Sound

We sailed from Patagonia to Tierra del Fuego to carry out some unfinished business of Captain Fitzroy's. On a previous voyage he had taken home to England three young Fuegians: two boys and a girl, and had them educated at his own expense. We were now to return them to their tribe. The intention being that they would pass on their learning and with the help of a missionary who was also on board, spread their Christianity. Well when we made the coast of Tierra del Fuego, our ignorance as to whether any natives still lived there was quickly cleared up by the usual signal of smoke. . .

Time shifts. . . He picks up some glasses. . . .

Through the glasses I could pick out a group of them scattered along the shore - all intrigued by our presence.

I went ashore with the landing party, and when I stood face to face with those people, it presented without exception the most curious spectacle I ever beheld. I would not have believed how entire the difference between savage and civilised man is. It is greater than between a wild and a domesticated animal, in as much as in man there is greater power of improvement. Indeed the education that Fitzroy had provided our three had shown how dramatic such improvement could be. I think of the three my favourite rejoiced in the name of Jemmy Buttons. Apparently Fitzroy had originally purchased him for buttons! Standing there on that beach, dressed as English gentlemen - and one lady, but facially recognisable as of the family of savages that confronted them, the effect was bizarre. And when in due course Jemmy's own family arrived, and, despite his finery, recognised him, they showed little in the way of emotion, except to demand that he shave! (Although the wretched boy had only twenty hairs on his face, and we were all standing around with untrimmed beards!) But they recognised Jemmy as one of their own, and he was going to have to CONFORM! No matter what! Which boded ill for the future

of Fitzroy's 'Civilisation' project! And alas, ill was the way it turned out. We returned to Tierra del Fuego just over a year later to find no sign of our British Feugians. The wigwam home the crew had built for them was empty. Had been for some time. And then . . . from, one of the little nearby islands a canoe approached. And in it. . . was Jemmy Buttons! But what a different Jemmy from the plump smart young man we had delivered the previous year! He was thin, pale and without a remnant of clothes, excepting a bit of blanket around his waist. His hair was hanging over his shoulders, and so ashamed of his appearance was he that he turned his back on the ship as the canoe approached. But he had come with gifts for his erstwhile friends, presenting us with cured Otter skins, a bow and arrows to be sent back to the school he had attended in Walthamstow! And two beautifully fashioned spearheads he'd made especially for me. We took him aboard and gave him a meal, while his brothers and his mother, and his newly acquired and very suspicious wife remained in the canoe. And it was particularly touching to see this naked savage dining at the mess table with the acquired manners of an English gentleman. . . He hadn't forgotten!

He returned with his family to the island, whence he came. . . He lighted a farewell signal fire. . .as the ship stood out, and set her course to East Falkland Island . . .

Seawash. . .Darwin looks out, as if across a wide sea. . .

Which, when we reached it, I discovered to be an undulating land with a desolate and wretched aspect.

A miserable place. . . It inspired me not a bit! So I returned to the ship and for a while I spent time bringing some order to the specimens of fossils, flora and fauna that were to be packed up and returned to Henslow. And I immersed myself again in Lyell's "*Principles*". (Which by then was the main educator of my thoughts on geology. He was leading me down his uniformitarian path with its view of the earth and its history. He had convinced me that the best

guide to the relative ages of the various strata was the fossils they contained. The greater percentage of extant species in the stratum, the more recent it was. Such wisdom had assisted me immeasurably while geologising on the Pampas, which I had found to be one wide sepulchre of giant quadrupeds.

I resurfaced from this period of study and assessment as the *Beagle* sailed southwards. We celebrated Christmas 1833 with roast Ostrich, which one of the crew members had shot. And it was whilst I was relaxing after this fine and satisfying meal, that my memory returned. . . I had heard the gauchos, the mounted herdsmen of the area, speak of a very rare bird called the Avestruse Petise. . . A bird about two thirds the size of the common ostrich. . just about the exact size. . . of the bird we had just eaten! I flew, myself like a bird in flight, to the kitchen area, and rescued the head, neck, leg and wing - and many of the larger feathers. I had saved the pieces of the a bird that was to be renamed "Rhea Darwinii"! I had not only dined very sumptuously on our Christmas roast, but it was going to immortalise me. . . And subsequently give ME much food. . . for thought! Because it set me wondering about the different species of similar birds, each one of which seemed to fill its own ecological niche. I began to question why there was this slight variation in ostensibly the same bird, when they had developed on the same continent. They all seemed to be fulfilling such similar roles in the order of things on earth. . . so what natural imperatives had forced them to vary from each other? Evidence for this line of thought had been provided by my Avestruse Petise. . . And we had very nearly eaten it! A while later, I had another experience that set me pondering a myriad of questions.

I was on shore, lying down in a wood of apple-trees, when the ground was shaken by the most severe earthquake - which the oldest of the local inhabitants said they could ever remember. There was no difficulty in standing up, but the motion made me giddy, and I can compare it to skating on very thin ice. . . or to the motion of a ship in a little cross-ripple. I felt that its severity had been much exaggerated. However, when a second tremor occurred when we were back at

sea, I became more apprehensive. . .

The ship shuddered as though it had touched bottom. . . And when we entered the port of Conception, imagine our horror on finding not a building left standing. Enormous rocks had been torn from the seabed and flung high onto the beach. Vast cracks, some a yard across, ran along the ground. And ever since, whenever I have seen a geological section, traversed by any number of fissures, I have understood the reason, and I have wished that some of those geologists who think the earthquakes of their times are trifling, could have seen the way the solid rock had shivered.

I had witnessed nature in her anger. And she had shown to me at first hand some of the powers that, just as Lyell had pronounced, had been changing the earth since time began.

Sea Wash

It was in September 1835, we set sail for the Galapagos Island.

I was convinced that here both the zoology and the geology could not fail to be interesting.. . . and how I was rewarded! Although at first sight, the islands were rather uninviting, everywhere covered by sunburnt, stunted bushwood. The surface was dry and parched, and the bushes smelt unpleasantly and looked no better than wretched-looking weeds. But the scene was nevertheless to me novel and full of interest. It is always delightful to behold anything which had been long-familiar, but only by description. On Charles Island - no relation! I shall never be that immortalised - I met the acting Governor, whose boast it was that he could identify which island a particular tortoise came from. And this again made me wonder why creatures, in remarkably similar environments HAD become different. . . sufficiently different to be identified with one island? And that island in such close proximity to its neighbours. And so I spent the entire month afforded me by the *Beagle's* survey work studying the inhabitants - both vegetable and

animal - of these remarkable islands - many of which are found nowhere else on earth - and perhaps the most extraordinary of these are the tortoises.

He lays down his pen, rises, as if on the island, moves around, discovering

Some of these are immense and it takes six or eight men to lift them - and they yield as much as two hundred pounds of meat. The inhabitants believe these animals to be stone deaf. It amused me when I overtook one of the monsters as it was quietly plodding along, to see how it was shocked at my presence. It drew in its head and its legs, let out a deep hiss, and fell to the ground with a heavy thud, as if struck dead and at that point I would often try and ride on their backs - I would sit astride the emormous shell - give a few rat-tats on the back and up it would get and off it would go - and so would I! Rolling into the dust - everytime! I could never stay on for more than a few plodding steps!

He chuckles, rises, and surveys things

At least the tortoises were wary of my presence, I was astonished that the birds were not. For the crew had been hunting them for sport as well as food and yet throughout that month no message seemed to pass among them that Man meant danger. . . so fearless were they that I was able to observe their habits with ease, and so become acquainted with some of the specific variations within a single species. For instance, I noted that the finches on the island - although all clearly related to each other - were divided into thirteen distinct types and what differentiated one from another was the shape of the beak. Beaks seem to have been developed to allow each group to follow a particular diet. There was the heavy, almost parrot-shaped beak for those birds that fed on large seeds; a longer curved beak reminiscent of the woodpecker to facilitate grubbing insects from bark, and a species of finch with a narrow, pointed beak, for tiny insects. Seeing the gradation and diversity of structure in one small intimately-related group of birds, it would seem that from an original paucity of birds in the Galapagos, one species had been taken and modified for different ends. . . It could be said perhaps that I collected blindly on the islands.

The truth is that I found myself confronted by creatures and plants that I needed to consider in great depth, and I knew that the coming months aboard the *Beagle* would afford me the time in the Poop cabin to undertake such work. So, as the ship set sail for the south seas, I settled to my study.

Sea wash

Looking back on that period, I think that although thoughts were being triggered in my mind by the apparent variations in species that I'd witnessed in the Galapagos Islands - and elsewhere, and in spite of the evidence of mutability that I'd observed, I was still a long way from drawing any conclusions. I simply concentrated on the business of collating, preserving and storing my finds, aware that I was going to need the wisdom and specific learning of men like Henslow and Sedgewick to translate what I had found into meaning. I think by then that I had formed the opinion that I would like to write a book. . . on Geology, which, with the inspiration of Lyell's three volumes of *Principles* (the last two of which had caught up with me during the voyage) had increasingly become the main focus for my expeditions on land.

But beyond that, I had not formed any particularly revolutionary theory about anything.

In Tahiti I remember we were received with great warmth. In New Zealand. . . quite the contrary**;** with deep suspicion and antagonism by a seemingly very warlike tribal people. I believe we were all glad to leave New Zealand. Not a pleasant place. The natives were bubbling with anger and of the English, the greater part were the very refuse of society. My first reactions to Australia were not much better. Though I was pleasantly surprised when I met a party of Aboriginal. Their countenances were good humoured and pleasant, and they appeared far from such utterly degraded beings as usually represented. But I learnt that they had no habit of cultivating the ground, nor would they take the trouble to keep the flocks of sheep that they had been offered. They were essentially a nomadic people, but their natural way of life was

being interfered with by the Europeans settlers. The effects of alcohol and new disease were eroding their number, and their seeming inability to adapt led me to fear for their future. They were going to have to share their land with a more 'civilised' culture, principally built from a society of convicts and ex-convicts. But a society already growing immensely rich and unlikely to concern itself with the welfare of a naked tribes people. I did not care for the smell of Australia. And I think that nothing but a sharp necessity would compel me to emigrate! I left its shores without sorrow or regret. But perhaps my outlook at this time was jaundiced, for I confess that I never saw a merchant vessel start for England without the most dangerous inclination to bolt! For the previous four months had seemed as long as the previous two years.

But we were heading now towards Keeling Island and one last piece of work that was to have a profound effect on the way others' perceived me as a fledgling geologist. I had read in Lyell's *Principles* that he believed that Coral Reefs built themselves up from the rim of submerged volcanic craters. Now if all coral reefs were crater-shaped this might have been a reasonable theory, but I had observed during my travels that this was not so. I had also observed that coral could not survive below thirty fathoms, and it seemed unlikely that all regions where the water was warm enough to sustain coral would have a crater conveniently situated within 30 fathoms of the surface. I therefore considered the proposition that, rather than coral building on a sedimentary rim far below the surface and climbing upwards, it might in fact start its growth just beneath the water, and sink further downwards, as during the passage of time the ocean floor subsided. And as the original coral growth sank below the magic thirty fathoms and died, so fresh coral would use the dead coral as a foundation for new growth. It would effectively build up itself. This was a theory I had been considering for a while. And in the reefs around Keeling Island, I found my proof. I regard the corals of Keeling Island amongst the wonderful objects of this world. It is not a wonder that at first strikes the eye of the body, but rather after reflection, the eye of reason. We look at a coral lagoon as a monument raised by myriads of tiny architects to mark the spot where a former land lies buried in the depths of the ocean. And somewhere,

buried in the depths of my reason as the southern winds filled out sails to blow us homeward, myriads of tiny seeds of thought were beginning to build their atoll.

The *Beagle* arrived in Falmouth on the second of October, 1836. . . I did not linger on her deck. On the coach for home, the stupid people who rode with me did not seem to think the fields one bit greener than usual . . I knew otherwise of course! To me there was no doubt at all. Ah! The wide world does not contain so happy a prospect as the rich cultivated land of England.

And then . . . I was home! Five years and three days after leaving. My sisters fell upon me with hugs and kisses and then almost carried me like a trophy to my father's study. He looked up from his desk, where he was working, gazed at me over the rim of his spectacles . . . and declared - "Why! The shape of your head is quite altered"!

He chuckles, bows slightly and exits.

End of Part One

PART TWO

Darwin is discovered working at his writing board. He spins on his chair, peers into a microscope, writes again. He continues this as he begins to speak

And so there I was - a sailor home from the sea, never ever to set foot on a ship again! Never ever to leave the shores of this land again, never EVER to be seasick again! I was home in the bosom of a loving family, who thought - I really do believe - that I would settle down once more to the "life of a gentleman", to chase butterflies and hunt beetles from the safety of a country parsonage. It was not to be. For I knew that the modest excitement my collection had aroused amongst the mighty in the geological and natural history world - only a few of whom I had known before the *Beagle* set sail - this excitement was going to draw me, like a moth to a candle flame, into the society of the Dons of Science, into the very centre of scientific learning and debate in London. So I set up shop, so to speak, in a house not far from my brother Erasmus: my eccentric, witty - and dependable brother, Raz, So you see, I was able to enter a London society already wooed by Raz, and it was through him that I met the author of the work that had nourished me during my years on the *Beagle*: Charles Lyell. He invited me to dinner, and there began a relationship that was often to brace me as I struggled with my theories through the years to come. Without any doubt, the learning I had acquired from *Principles* became the bedrock of my own thought.

I began giving papers based on the conclusions I was drawing from my *Beagle* work, which were received favourably by the great guns. And this was giving me a touch of confidence. Then John Henslow suggested I should accept the offer to become secretary to the Geological Society. I was very apprehensive about this; only a while before Lyell had given me advice that now began to toll alarm bells in my mind.

"Don't accept any scientific place if you can avoid it." He said. "Work exclusively for yourself and for science for many years. And don't prematurely incur the honour of official dignities."

I was inclined to bend to this view, for I knew how much work awaited my full attention. And more than that, I was beginning to experience uneven health, a phenomenon the doctors seemed

unable to explain, and which concerned me because it was sapping my energy. Apart from the almost constant seasickness and very occasional times I'd been laid low by a fever, I had enjoyed very robust health during the voyage. So the recurring sickness and uncomfortable palpitations of the heart I was now experiencing was an added inducement to pay heed to Lyell's warning.

On the other hand - and this was why Henslow had suggested me - the position of secretary would bring me in close contact with those upon whom I was going to have to depend for the assistance I needed in analysing and collating my specimens. So I succumbed and for three years held the post of secretary in one of the most prestigious scientific debating chambers. And during this period I became increasingly aware of the religious dimension to the debate amongst natural scientists. It ranged from the stern orthodoxy of the Genesis account of creation to Lyell's view of continuous change. It may seem strange coming from one who had nearly succumbed to life in a country parsonage, but the fact was that this religious element was concerning me very little. On the contrary, the very conservatism of the thinking that leant strongly towards a fixative species rather than mutability was urging me on in my attempts to decipher and evaluate the evidence of the notes I had collected during my travels. I had been studying these afresh during the early months of my secretaryship, and had completed my *Journal of the Beagle Voyage* which was received with great warmth - not least by Richard Owen, who referred to it as "The most delightful book in my collection". Owen was the leading anatomist of the day, and was not always to remark so kindly on my work!

I'd been working some years in London by then, sharing the social life with Raz, who seemed to be a friend or acquaintance of absolutely everyone, when it occurred to me that I would like to get married. At least I'd thought it was marriage I wanted - perhaps I'd thought that I had wanted to marry Fanny, but had never had the courage to ask her to wait for me while I sailed away. Perhaps I didn't ask her because I feared she would say no. Perhaps I didn't ask her because I recognised that her personality was too capricious to be contained in a country

parsonage. Any way, with marriage in my mind, I travelled home to Shrewsbury to collect myself - I was in something of a state about all this. I'd been working hard, and it seemed intolerable to spend my whole life like a bee, working, working, working. I made a list of the pros and cons of married life. I'm ashamed after all these years to remember what I wrote then. Suffice it to say that I DID come down firmly on the side of marriage, and the anticipated delight of children. My father advised a swift marriage if I could find a sensible woman insensible enough to have me.

"Better to have children young".

So I determined to keep a sharp look-out for a suitable bride. But it was not with this end in view that I set out to visit my Uncle Jos. Wedgewood at Maer. (It was Uncle Jos, you'll remember whose advocacy had persuaded my father about the *Beagle* voyage.) I loved my home at The Mount - and am devoted to my sisters; but whatever I was at Maer I always felt so - free.

We hear piano music

And in the evening there was much agreeable conversation - not so personal as it generally is in large family parties. And there was music.

He listens for a moment, smiles.

And the love I felt in that family was almost as great as that in my own. And I conjectured that my cousins, Elizabeth and Emma, would understand if I confided in them regarding my search for a bride. . . Indeed, they would know many of the eligible ladies of Staffordshire. I remember musing as I rode that day to Maer how peculiar it was to be deliberately setting out to seek a stranger to make a wife! Because "that's what all men do!' Suddenly. . . like a bolt from the

blue, I realised that was not "what all men do"! Uncle Jos's son Joe was not going to do that. He was going to marry his cousin, my sister, Caroline. He was going to marry a girl he had known all his life. Just as I had known Elizabeth and Emma . . . ! I remember sitting stock still in the saddle in the middle of the road as the implications dawned on me.

Emma! Emma, Emma Emma! Dear, sweet Emma, who I had known all my life! Emma whose eyes sparkled at me teasingly whenever I have taken myself too seriously, Emma, who has refused four very eligible suitors, I know that perfectly well! But why? Oh Emma! How is it that a man can fail to see what is so evidently to be seen right before his eyes? I must ride on to talk to Emma!

But you know, my courage failed me! Oh yes, we talked. And talked and talked and talked as we always had. But I just didn't - couldn't? - talk . . about us.

Piano music fades

And so I returned to London, that odious, dirty smoky town where one can never get a glimpse of all that is best and worth seeing in Nature. It was another four months before I girded my lions again and returned to Maer.

It wasn't until the morning after I arrived that I was able to corner Emma alone. .

Needing to say what I want to say makes it so difficult to say! In the end . . .

"Emma. . . will you marry me?"

And do you know what she said?

"Oh Charles, you fool! You are the only one in both our families who never realised that I have always loved you! We've all been waiting for you to propose. . . of COURSE I'll marry you!"

The only one in both our families! Oh dear! I must have seemed an awful dunderhead!

And so . . . we married! She came with me to London, and at last I was able to return some of the hospitality that Raz and his friend had treated me to, and particularly that of Charles Lyell and his wife. Lyell had become, like Henslow, my mentor as well as my friend. With him I was able to discuss and evaluate some of the geological observations I had made from the *Beagle*. Observations of a novice geologist, so he was an invaluable interpreter of what I had seen. His encouragement of me never wavered. Even when it became apparent that my views were diverging from his. He was, for instance, wholly supportive of my theories on the structure and distribution of coral reefs; he conceded that my observations had superseded what he had earlier written. That. . .was Charles Lyell.

As yet I had been working on my four weeks of notes written on the Galapagos Islands quite alone, and I suppose in some secrecy. I had an instinct that all that I had observed there was important, was going to matter. And I needed the time to reason it all without the distraction of other people's perceptions. I had in my head the seed of an idea, and I wanted to keep it in isolation, so to speak, from other ideas, established ideas that might - just might - infect my seed. It's hard to explain even now but I . . . I thought I was ON to something - I wasn't quite sure what - and recalling perhaps the occasion when I'd run to Henslow in my excitement at making a 'discovery', (that had been discovered long before!) I was determined not to share my seed. From my observation I knew that I could no longer subscribe to any theory of development that rejected the mutability of species. Even if by implication this might be interpreted as rejecting the hand of God as the great creator. I felt that my seed, nurtured gently, away from outside

prejudices, might grow into a . . . well, let's be pretentious . . . a tree of knowledge! Now, evolutionary ideas had been suggested by generations of thinkers stretching back to the birth of Christ - Maupertius, Buffon, Diderot, Kant, Herder and the most recent a Frenchman - Jean Baptiste Lemarck - even my own Grandfather . . . dead before I was born!

Oh, yes! Grandfather Erasmus - was, amongst many other attributes, a distinguished poet in his day. Let me try to recall one of his verses. . .

"Organic life beneath the shoreless waves
Was born and nurs'd in Ocean's pearly caves;
First forms minute, unseen by spheric glass
Move on the mud, or pierce the watery mass;
These as successive generations bloom,
New powers acquire, and larger limbs assume;
Whence countless groups of vegetation spring,
And breathing realms of fin and feet and wing.

He chuckles

Strange - isn't it. My Grandfather wrote that in 1794

So the thought wasn't new. . . but my little seed . . . that was different. . . that was going to show the 'how' of it all!

And perhaps another reason for my secrecy was that I recognised that I was about to travel down a path that would bring me into fearful conflict with established religious thought. There was no doubt that the omnipotence of God in the Genesis account of the Creation was believed by most people - including my Emma - and even by those scientific minds struggling to unravel the mysteries of the universe. And, although some of these might be persuaded of the evolution of

animals and plants, they could never be moved from their conviction that Man was created by the hand of God - Man was DIFFERENT!

Whereas, I was beginning to understand that if I was able to establish the mutability of animals and plants, it was going to have to follow that Man's development - in principle - was no different. Remember I had seen the natives of Tierra del Fuego and the savages of New Zealand. I thought "Let Man visit an orang-u-tan in domestication. Hear its expressive whine, see its intelligence when spoken to, as if understanding every word, see its affection to those it knows, see its passion and rage, sulkiness and very extreme of despair. . . and then let him look at a savage, roasting his parent, naked, artless, not improving, yet improvable. And the let man dare boast of his pre-eminence!

But if I was to prove this hypothesis, I knew I was going to have to confront in time some of my erstwhile supporters and friends. So be it! But. . . not yet! Not until I knew the "how"!

So, I withdrew once again into my more secret world, and only sought refuge from, and courage for, my work from a few select friends. And then I read a book I must have been destined to read - so great an influence did it have on my thinking - it was called "*Principles of Population*" by Thomas Malthus. In it he proposed a theory that provided my burgeoning ideas with a realistic foundation. It was Malthus' contention that there was a constant tendency in all animated life to increase beyond the nourishment prepared for it; that if all seeds that fell upon the earth were allowed to prosper they would fill millions of worlds in the course of a few thousand years! So there had to be some law of nature that would prevent such unhindered growth-. . . and the law was - famine. There would not be sufficient nourishment to sustain all that wanted to grow, and his theory went beyond just plant life but included animals and humans. Population, he reiterated, "has a constant tendency to increase beyond the means of subsistence". Until I had studied Malthus' theory, I'd been feeling my way along the lines that species were

fighting against species for survival. And now suddenly, I could see that species of the SAME TYPE were pitted against each other, in their endeavour to adapt to the environment in which they existed; a sort of 'species civil war' . . . And only the fittest would survive. Malthus' book had been a revelation, and Oh, how I wished he could have lived a little longer, that clever clergyman! But, alas, he'd died a year before I'd returned from my voyage. But he had provided me with a new insight and fresh stimulus to continue analysing my notes, in preparation for what I was beginning to think of as "My Big Species Book".

I had to search for the facts to illustrate the sort of species change that had evidently occurred to increase the chance of survival. The work, I knew was going to be intense, and would require the sort of uninterrupted peace and solitude that it was never possible to enjoy in London. And since Emma had always hankered to return to a country life, (and by then we had our children William and dear little Annie to consider) we went house-hunting. And after many a rickety coach-ride into the country lanes of Surrey and Kent, we decided on an old, ugly house in the village of Down, about a two-hour journey from London Bridge. It looked neither old, nor new, walls two foot thick, windows rather small, and ironically, given my near former calling, it used to be a vicarage! Ugly? Yes. . . but we both thought we could make it better. And most important, it had a wonderful garden - and the countryside around was inviting for walking and riding. The house was ours for two thousand, two hundred pounds. Emma wasn't impressed at first, but she came round. And here we still are! And I think - with the alterations we have made, our ugly old house no longer quite so ugly! 'though my father never cared for it - said we should call it "Down at the mouth" - and one of the bricklayers we have employed from time to time often said to me - with a gloomy shake of his head - "A most deceptious property to buy sir!!" What he meant - I've never known!

There are about forty houses in our little village. There's an old walnut tree in the middle where three lanes meet by an old flint church. The inhabitants are very respectable. There's an infant

school, and many of the grown-up people here are great musicians. It's quiet. There are no high-roads running through the village. There's a little pot-house where we slept when we first came to see the house. That's also a grocer's sop - and the landlord is a carpenter too! There is one butcher, one baker and a post office. Everyone touches their hats to you here. . . rather like in Wales. And they sit at their open doors in the evening. The country is extraordinary rural and quiet, with narrow lanes and high hedges and hardly any ruts. It really is surprising to think London is only sixteen miles off! A Carrier goes weekly to London and calls anywhere for anything and takes anything anywhere. There's not much of a view from the drawing room . . . but plenty of trees, and some give good fruit and I have this capital study. My refuge, I call it - although when the children were growing up it was by no means my sanctuary! I remember once coming in here to find Lenny jumping up and down on a sofa we had then in front of the bookcases. And I admonished him, reminding him that I didn't want to find him doing that kind of thing in <u>my study.</u> And his response? "I think then, that you 's better leave <u>your study</u> for a while Papa!"

Well, I was never very good at playing the patriarch - I enjoyed my children too much. I love them all of course. But I believe I had a particularly soft spot for little Annie, our second-born. I suppose that often happens, doesn't it? Father and daughter? She used to accompany me occasionally on my Sand-Walk expeditions. And although I walked fast, yet she often used to go before, pirouetting in the most elegant way, her dear face bright all the time with the sweetest smiles. She often used exaggerated language, and when I quizzed her by exaggerating what she had said, how clearly can I see now the little toss of her head and the exclamation, "Oh Papa! What a shame of you!"

I'm so grateful that we have the daguerreotype of her from that time. . . because you see that's all we have. My little Annie died when she was only nine. We lost the joy of the household and the solace of our old age. Our Scottish nurse, Brodie, was so overcome by grief that she left

Down for good, retiring back to Scotland in desolation.

I have not told you about the Sand-Walk, have I? I had it laid out beyond the kitchen garden and down into the woods. And I use it every day. Unless, my wretched illness prevents me. It's my "thinking walk". And the immensity of the problem I give myself to ponder dictates the number of circuits I decide to make. So, a little cogitation merits perhaps two circuits, while a real puzzle, or a learned discussion with one of the Dons of Science, down for the weekend from London, might command seven - or even nine rounds of the Sand Walk. And I set the number before I begin by placing the requisite number of stones on the ground at the entrance of the wood. And each time I come round I kick a stone out of place. Very scientific, you see? And I don't allow myself to return to the house until all the stones have been kicked!

Of course, I don't only walk to think - but also to observe. And then I don't bother about the stones. And walking as I do in the early morning when Nature herself is waking up is a perfect time for observation. Indeed, I am at this very time following the progress of some black and white briony amongst the shrubs for a study I'm doing on the habits of climbing plants. And there was an occasion - a few years ago - when I was watching the antics of a goldfinch - and standing very still - when I sensed a scratching at the back of my thigh - and then on my left shoulder - and then on my right - I had been mistaken for a tree by three young squirrels! But they never found any nuts in my beard!

It was the Sand Walk that witnessed the Council of War one Sunday when Charles Lyell and Joseph Hooker descended on me to devise a plan to beat off an innocent assault on my Species theory . . . But I mustn't confuse you - I'm getting ahead of myself.

I must tell you though about Joseph Hooker. Hooker is a botanist whose background is strangely similar to my own. He studied medicine at Edinburgh, whilst pursuing his own

interest in Natural History. And he too went on a voyage of discovery, for four years he was assistant surgeon and naturalist on an Admiralty expedition to Antarctica, collecting all the while, as I did, and sending details of his observations and conclusions in a series of letters to Charles Lyell, which he then passed to me. So when I actually met Hooker, on his return from Antarctica, I was well prepared for his way of thinking, and the brilliance of his analytical mind. It was quite natural therefore that we should come together to discuss what was of mutual interest. And so began a deep and lasting regard for the man, and he has become like Lyell, my confidante and support during all of my species endeavour. He was of immeasurable help to a botanical ignoramus like myself who can hardly tell the difference between a daisy and a dandelion! And through his wisdom I have been able to turn speculative theory into REASONABLE theory. I was able to confide in him too.

The meals that we shared together here at Down and the hours that we spent closeted here in my little den, while I hurled questions at him that I'd previously prepared on little slips of paper - those times, they are legion!

I remember it was to Hooker that I'd confided some of the guilt - is that the right word, guilt? - well, deep apprehension at least - about the controversy that would erupt when my work was published.

I wrote to him "I am almost convinced (quite contrary to the opinion I started with) that the species are not (it is like confessing a murder) immutable. I think I have found out (here's presumption!) the simple way by which species become exquisitely adapted to various ends. You will now groan and think to yourself, 'on what a man have I been wasting my time and writing to'. I should, five years ago, have thought so too."

It was the support I felt from having him in my camp - although he was by no means always in

agreement with my conclusions - but his support encouraged me to fight on when I might have been inclined - particularly during my sicker days - to retire from the fray. But then, perhaps I'm not giving myself the due I deserve for a degree of gritty perseverance! Because around about that time I began a project that I had planned would take me a few months to complete, and which I felt sure would provide me with vital evidence in my speculation on the mutability of species. Well, I was so right in the latter. And so wildly wrong in the former! I completed the project, and resulting four volumes of analysis, eight years later! For eight years it seemed I had committed all my working hours to the study and dissection . . of Barnacles! Yes. Barnacles! And all because I had observed a form of Barnacle in Chile during my voyage that differed so markedly from all others that I needed to determine why. And one Barnacle led to another. . . for eight years!

However, at the end of that time I knew I had earned greater credibility for my work - certainly in the field of Zoology. I was after all going to have to confront the masters in this field, and I needed the credentials that would command their respect and prevent them from dismissing my views as mere 'eruptions from a dilettante'. So that work over, and results published, I was free to turn again to my species book.

Although through the years, since the *Beagle* voyage I'd had a considerable amount of my work published, I had never revealed in print any of the basis on which I was building my evolutionary theory, although I'd discussed its progress with Lyell and Hooker. And this was the course I'd intended to continue, because I didn't want a single one of my ideas to be exposed to public debate until I'd accumulated facts to justify them. I felt that, if I let one rabbit out of the hat, so to speak, before I was sure that it had the correct number of legs and ears and eyes, I would leave myself open to ridicule, and consequently anything else I might pronounce upon, to suspicion. So I had to be sure about all my 'hows' before I could decide the 'when' to publish.

The time crept by. I continued to make demands on Lyell and particularly on Hooker. And I sought answers to carefully generalised questions from further afield too. And so I would have gone on until every brick of my edifice had been carefully mortared into position. . . had it not been . . . for Wallace.

It was Lyell who first drew my attention to a paper that had just been published by Wallace, in which, based on his experiences in Borneo, he observed that the similarity between past and present species suggested development rather than constant change. He was treading on my toes! It was therefore Lyell's suggestion that I retreat from my obstinate stance of waiting till my whole work was complete and begin immediately to precis and publish my theory. I realised that if I did this I could only refer to the main agency of change - selection, and perhaps point out a very few of the leading features that countenance such a view - and a few of the main difficulties. But it was Lyell's contention - and Hooker's - and supported by my brother, Raz, that I should act fast less I suddenly discover all my work had been overtaken. So I followed their advice, and set to work. But I found I could not precis nineteen years of labour - for that's what it had been - into an essay. I had to express the facts as fully as I was able. It was going to run quite a big book! It would be too much of a risk to be anything less than comprehensive. There would at any event be so much antagonism, so much bile heaped upon me by those who would not only fundamentally oppose my thinking, but consider it a foul heresy, that my views would have to be barbed with indisputable fact if I was to breach their defences. I could not get away with the mere skeleton of an idea.

After a year. . . I had reached the end of chapter six. It was, I felt, a crucial chapter. And I was unhappy with it. So, when I went on one of my periodic water-treatments at the Moor Park, I took it with me. And I think I much improved it. It was the chapter entitled "On Natural Selection. . .". When I returned from Moor Park I wrote to Wallace; he'd written to me earlier, wondering why his first paper had aroused so little interest and response? I might have replied,

"You should have seen Charles Lyell start to hop! And how I've been hopping ever since!" But I thought I'd be more discrete, although I did point out to him that though we had thought much alike, and to a certain extent come to similar conclusions, that it had been twenty years since I opened my first notebook on the question how - and in what way - do species and varieties differ from each other. I told him too that I was preparing the work for publication. It seemed reasonable to stake my claim on the work, thus far completed. But I was in for a further shock from Mr Wallace, which, but for the support of Lyell and Hooker, might have resulted in my abandoning all that I'd achieved, or thought I'd achieved, during the previous twenty years.

He wrote to say that he'd suffered a fever, and on awaking - and during the following three weeks of convalescence - it had suddenly flashed upon him that in every generation the inferior would inevitably be killed off and the superior would remain. That is. . . the fittest would survive. He went on to explain his enthusiasm for the theories of Malthus, and the conclusions he drew from them in the light of the observations he had made - and they were precisely the same conclusions as my own! In four thousand words he had outline the theory that was to have been the subject of my big Species book! Here was a man who had apparently woken from a dream - or at least a fever - in some far distant corner of the globe, pronouncing a solution to the theory of evolution, a study that I'd been working on for twenty years, and expressing it in a phraseology almost identical to my own! It was not only uncanny - it was DISASTER! But at least Wallace had shared his dream with me; it was to me that he had directed his four thousand word letter. Just suppose that he'd sent it instead to one of the many learned scientific journals. I sent the letter to Lyell, and wrote instantly to Hooker, shouting my despair. And that's when they arrived by coach together that Sunday morning here at the house. This was the Sand Walk intervention I mentioned earlier. They had devised a plan - not a subterfuge - but a plan that they felt would be fair both to Wallace and to myself. They decided that Wallace's paper should be read in full before the learned membership of the Linaean Society, and that extracts from an earlier essay of mine, clearly indicating the conclusions that I'd already reached, should be read

at the same time. This was done. And the furore that was awakened by these unprecedented disclosures of Wallace and Darwin. . . well. I recorded in my diary part of the Linaean Society Minutes from that year:

"The period had not been marked by any of those striking discoveries which at once revolutionise, so to speak, the department of science on which they bare" .

Our revolutionary theories had quite failed to revolutionise! Oh dear! Hooker wrote to Wallace explaining what we had done. And it all met with his complete approval. Thank Heaven! But I must concede that the thought of losing my priority of many years' standing in the field that Wallace had now entered spurred me on to produce a longer abstract of my Species book. I began this while holidaying with Emma and the children on the Isle of Wight. Ten months later, the publisher had the manuscript, and abided by his promise to publish though he thought the subject "as absurd as though one should contemplate a fruitful union between a rabbit and a poker"!

I was able to send advance copies to my friends and to all those who would have thought it discourteous not to have been a recipient of my baby that had been gestating for two decades, and was now about to be delivered into a possibly hostile world. I was weary from my long labour, and retreated to a spa in Yorkshire to recuperate from a whole catalogue of suffering that I'm sure had been brought about by the anxieties of publication. My secrets were about to be exposed!

The first edition - of one thousand, two hundred and fifty volumes - was sold out before publication. A new edition went to press instantly, which utterly confounded me. Charles Lyell wrote to say:

"I've just finished your volume - and right glad I am I did my best, with Hooker, to persuade you to publish it. It is a splendid case of close reasoning."

Charles Kingsley - a clergyman - wrote to thank me for "the unexpected honour of your book. All I have seen of it awes me, and if you are right I must give up much that I have believed."

The botanist H C Watson wrote: "Natural Selection will undoubtedly become recognised as an established truth in science. It had the characteristics of all great natural truths. You are the greatest revolutionist in natural history of this century. . . if not of all centuries!"

Hooker called my work "A glorious book", and then came a letter from a man who - with his energy and enthusiasm and fierce sense of friendship has shone like a blazing beacon in my life ever since. . .

"No work on natural history science has made so great an impression on me. Nothing can better the tone of your book. I trust you will not allow yourself to be in any way disgusted or annoyed by the considerable abuse and misrepresentation which, unless I am greatly mistaken, is in store for you. Depend upon it, you have earned the lasting gratitude of all thoughtful men, and as to the curs that will bark and yelp, you must recollect that some of your friends are endowed with an amount of combativeness, which may stand you in good stead! I am sharpening up my claws and beaks in readiness!"

Signed, "T H Huxley"

And I remember part of a letter from my brother, Erasmus - typical Raz!

"The A Priori reasoning is so entirely satisfactory to me that if the facts won't fit in, why so much

the worse for the facts, is my feeling!"

But of course a coin has two sides. Adam Sedgewick wrote to me; remember Adam Sedgewick with whom I'd done my geologizing in Wales, and who had been so excited by my Megatherium?

"I have read your book with more pain than pleasure. Parts of it I admired greatly, other parts I read with absolute sorrow. Natural selection - your grand principle - is no more than a secondary consequence of known, or supposed primary facts. It was the will of God that ordered the world. If you can break this moral link, which you cannot, humanity in my mind, would suffer a damage that might brutalise it and sink the human race into a lower grade of degradation than any into which it has fallen since its written record tell us of its history."

Sedgewick's moral standpoint, which represented those I knew would be outraged by my rejection of the Creator's hand, was to be mirrored in many of the journal reviews. To them the biblical account of the Creation carried scientific status, and it was not the place of Charles Darwin to undermine widely-held Christian belief by denying this.

And then . . . there was Richard Owen. Owen had been an unstinting admirer of the zoological specimens I'd sent home from my voyage. But he had, in recent years become increasingly protective of his status as the leading anatomist in the land. He had now decided to wave his flag of pompous scientific certainty from the battlements of the opposition. And the method of his attack had more to do with discrediting me than my ideas, writing in the *Quarterly Review* that my conclusions on natural selection had "the frenzied inspiration of the inhaler of morphitic gas. The whole world of nature is laid for such a man under a fatalistic law of glamour, and he becomes capable of believing anything!"

So my ideas had - as I knew they would - split the scientific community.

Yes, I had split the world apart, as I had anticipated. Split too my own close colleagues many of whom whilst applauding the scope of my book, remained skeptical of the ideas in it. It was inevitable therefore that some form of public debate would occur, bringing those who had been converted at least in part to my theory of natural selection into open dispute with those who had not. And, of course, in this latter pack the scientists were hugely supported by the clergy. A meeting for the British Association for the Advancement of Science in the Library of the Museum at Oxford University before an audience of 700 provided the battlefield for this conflict, in the Chair was my erstwhile mentor - and still precious friend - John Henslow - himself a clergyman. I did not attend. . . I was just not well enough to attend. I was receiving treatment for my sickness in Richmond. But I subsequently had recounted to me by Henslow and Hooker and Huxley a detailed "blow-by-blow" account of the struggle.

After some inconsequential skirmishing, Richard Owen rose to strike the blow that would kill Mr Darwin's theory. But . . . he took a wrong turning, claiming that there were more differences between the brain of a gorilla and a man than a gorilla and the lowest primate. Huxley's view of this was rubbish, and he met Owen's claim with a direct and unqualified contradiction, and quoted evidence from a study that he and others had been making which confirmed the similarities between the brains of humans and the higher apes; that the features which distinguishes Man from Monkey is the gift of speech. Huxley's sharpened claws had claimed their first victim!

Next into battle, briefed (they all believed by Owen) was the Clergy's representative, the Bishop of Oxford, Samuel Wilberforce, "Soapy Sam" they called him! He had pronounced beforehand that he was going to "smash Darwin"! He made his speech: he's a fine and articulate speaker. But by all accounts, though he was wildly cheered by his supporters throughout, it was

gloriously uninformed scientifically. And when at the end he turned to Huxley and inquired as to whether it was through his grandfather or grandmother that he claimed to have descended from a monkey, Huxley leapt to his feet, knowing that he had him!

"I assert that a man has no reason to be ashamed of having an ape for his grandfather. If there were an ancestor whom I should feel ashamed of recalling, it would rather be a man! A man of restless and versatile intellect who not content with success in his own sphere of activity, plunged into scientific questions with which he has no real acquaintance!"

The claws had scratched again! And now Soapy Sam was being booed by the undergraduates in the hall. There was one more moment of drama at the Oxford meeting. Huxley described how after he had sat down and quiet had returned, a slight, grey haired man arose, waving a Bible which, he cried, was the single unimpeachable authority from which all truth derived. He shouted that he had had long and bitter arguments with Mr Darwin over his rejection of the Genesis account of Creation, whilst sharing his cabin with him for five years aboard HMS *Beagle*. Yes! The frail man was Vice Admiral Robert Fitzroy! My *Beau Ideal* of a Captain!

Of course, I'd always known his fundamental first views about the Creation, and I had, on many occasions, used his wit and intelligence as a sounding board off which to bounce my emerging ideas. It was sad to know that he now remembered these discussions as "bitter arguments". I remember talking with my sister, Susan, about Fitzroy soon after returning on the *Beagle*, saying that I doubted what his end would be. In many circumstances, I said, a brilliant one - in many others, a very unhappy one. Only last year. . . on a Sunday morning . . . he cut his throat.

And so, his story was ended. . . I hope he's found his paradise. This has been the story of my abominable volume. . . and it's not ended . . . yet. . . Meanwhile. . . this is the only paradise I need. Here, in this ugly house. In this garden. To hear the pock of the tennis ball, to see the

garden laid for tea-parties - sometimes eighty people out there, trestle tables, tea and strawberries, music under the trees, dancing, and from over the meadow the sound of bat on ball as the shadows lengthen across the cricket field. The place seems to glow at times like these. And me? Oh, there's much work I still need to do and when it's done I hope what I've written will hold good. . . for a while! At least, - until somebody - somewhere - has a better idea!

From the desk, he picks up a book. . . HIS book. He thumbs through it, comes to the final page. . .reads. As he does so, we hear bird song, the sounds of nature as they gradually fill the air...

It is interesting to contemplate an entangled bank, clothed with many plants of many kinds, with birds singing on the bushes, with various insects flitting about, and with worms crawling through the damp earth, and to reflect that these elaborately constructed forms, so different from each other, and dependent on each other in so complex a manner, have all been produced by laws acting around us. These laws, taken in the largest sense, being growth with reproduction; inheritance which is almost implied by reproduction; variability from the indirect and direct action of the external conditions of life, and from use and disuse; a ratio of increase so high as to lead to a struggle for Life, and as a consequence, to Natural Selection, entailing divergence of character and the extinction of less-improved forms. Thus from the war of nature, from famine and death, the most exalted object which we are capable of conceiving - namely the production of the higher animals - directly follows.

There is a grandeur in this view of life, with its several powers having been breathed into a few forms. . . or into one. And that, while this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been - and are being - evolved!

Blows out Candle.

He closes the book. As the lights slowly fade, the sound of bird song rises to a crescendo, and then fades.

END,