

CHARLES DARWIN'S THE LIFE OF ERASMUS DARWIN

Charles Darwin's book about his grandfather, *The Life of Erasmus Darwin*, is curiously fascinating. Before publication in 1879, his text was shortened by 16%, with several of the cuts directed at its most provocative parts. The cutter, with Charles's permission, was his daughter Henrietta – an example of the strong hidden hand of meek-seeming Victorian women. This first unabridged edition, edited by Desmond King-Hele, includes all that Charles originally intended, the cuts being restored and printed in italics.

Erasmus Darwin was one of the leading intellectuals of the eighteenth century. He was a respected physician, a well-known poet, a keen mechanical inventor, and a founding member of the influential Lunar Society. He also possessed an amazing insight into the many branches of physical and biological science. Most notably, he adopted what we now call biological evolution as his theory of life, 65 years prior to Charles Darwin's *Origin of Species*.

DESMOND KING-HELE is the leading authority on Erasmus Darwin. A Fellow of the Royal Society since 1966, he has written and edited numerous books, including the *Letters of Erasmus Darwin*. In 1999, he was awarded the Society of Authors' Medical History Prize for his biography *Erasmus Darwin: a Life of Unequalled Achievement*.

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Charles Darwin
Frontmatter
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Erasmus Darwin at the age of 38, painted by his friend and patient Joseph Wright of Derby in 1770.

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Dedicated to
GEORGE PEMBER DARWIN
1928–2001
whose generous donations of family papers
to Cambridge University Library
were the inspiration for this book

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Introduction



Charles Darwin's book about his grandfather Erasmus Darwin is curiously fascinating. Many people see Charles Darwin (1809–1882) as the most influential man of the last three centuries in bringing about a durable change in world-views. Indeed he was a strong candidate a few years ago for 'Man of the Millennium'.

You might therefore expect that all the books written by Charles would by now have been published in full. That is not so. His *Life of Erasmus Darwin* was shortened by 16% before publication in 1879, and several of the cuts were directed at its most provocative parts. The cutter, with Charles's permission, was his daughter Henrietta—an example of the strong hidden hand of meek-seeming Victorian women.

This first unabridged edition includes all that Charles originally intended, the cuts being restored and printed in italics.

The subject of the book, Dr Erasmus Darwin (1731–1802), has grown in stature during the twentieth century and is now seen as having achieved more in a wider variety of fields than anyone since. He was famous as a physician in the English Midlands for thirty years, and after his massive treatise on animal life, *Zoonomia*, was published in 1794, he was recognized as the leading medical author of the decade. And this happened when he was already securely in place as the leading English poet of the 1790s, or perhaps, as Coleridge said in 1797, 'the first literary character of Europe'. Erasmus Darwin's fame as a poet did not outlast the century; but he greatly influenced Blake, Wordsworth, Coleridge and Shelley. Earlier in his life Erasmus Darwin had been a keen and capable mechanical inventor: he devised the method of

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steering used in modern cars, for example. He was socially skilful too, and created several Societies, including the Lunar Society of Birmingham. His greatest talent, however, was an amazing insight in many branches of physical and biological science. For example, he was the first to explain how clouds form and, most relevantly for this book, he adopted what we now call biological evolution as his theory of life, in 1770. Many years later he risked publishing his evolutionary views, only to be rebuffed. Most people did not wish to see God deprived of his role in creating species; and everyone condemned the demeaning idea that humans had animals as distant ancestors and were no more than humanimals.

Charles's book was the first biography of Erasmus, and all subsequent biographers have been deeply indebted to it.

The book is short, direct in style, and free of all pomposity. It is also quite jovial at times, a reminder that in the Darwin household, 'the merriment, the jokes, the fun' would all be from Charles. He does not attempt a coherent narrative: instead he produces a succession of real-life pictures, more like a modern television biopic, with himself as the witty and (fairly) authoritative presenter. In his scientific books Charles was constrained by the conventions of science-writing: here (and in his *Autobiography*) he writes freely and fluently. Sometimes he teases us. Sometimes he is indignant, as when he condemns 'those bigots . . . too ignorant to be able to see their own ignorance'. He thinks he is scrupulously impartial, and free of family favouritism. Indeed Charles seems like St Peter at the celestial gate when he weighs up the pros and cons of Erasmus's moral character.

Erasmus and Charles each published a scheme of evolution, 65 years apart: it was an unbreakable bond between them. Charles habitually calls Erasmus 'my grandfather' in the book, and also when writing to other grandchildren of Erasmus, such as his sisters or cousins. He seems unaware of the significance of this possessive phrasing.

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Erasmus got nowhere with his presentation of evolution: he was a century ahead of his time, as we now smugly say. It was Charles, proceeding cautiously over many years, who persuaded his contemporaries to take seriously the idea of evolution by natural selection, a world-view that has been amply vindicated in recent years.

For Charles, his strong bond with Erasmus was full of problems. If Charles praised Erasmus's evolutionary writings, people would say that Erasmus had all the ideas first, and Charles merely filled in the detail. Indeed Bishop Wilberforce, in his famous review of the *Origin of Species*, accused Charles of reviving the speculations of his 'ingenious grandsire'. So, when Charles started the book, he felt that Erasmus would have to be 'put down' rather than praised, and he took the line that Erasmus was not very important as a free-standing person. The book was being written as an item of family history, not because Erasmus's life-story needed to be told.

To Charles's great credit, he gradually changed his mind: 'the more I read of Dr. D. the higher he rises in my estimation', he wrote. This is reflected on pages 59–60, where Charles says Erasmus had 'vividness of imagination', 'great originality of thought', 'the true spirit of a philosopher' and 'uncommon powers of observation', all applied in a 'surprising' diversity of subjects. His final tribute to Erasmus (on pages 88–9) is just as generous, but was selected for deletion by Henrietta and remained unknown for a hundred years.

The book is quite a minefield of such ironies and paradoxes; some of them spring from family attitudes.



There are several paradoxes buried in Darwin–Wedgwood family history. Though you might not guess it from his many references to 'my grandfather', Charles actually had two grandfathers, Erasmus

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Darwin and Josiah Wedgwood, who were close friends for thirty years and are both well known today as among the leading men of the eighteenth century. Yet Charles, and his wife Emma, who was also a grandchild of Josiah Wedgwood, knew very little about either of them and did not value their achievements. Many small pieces of inherited Wedgwood ware were damaged or destroyed when used as playthings by their children; and their two Wedgwood copies of the Portland Vase were sold to buy a billiard table for their home at Down House in Kent.

This paradox is all the sharper because the Darwins and Wedgwoods formed a close-knit extended family. Nearly everyone, it seems, knew and liked ‘their sisters and their cousins and their aunts’. There were plenty of them, because the three grandfathers of Charles and Emma had 33 children, of whom 27 survived until the age of eighteen. Yet there is scarcely a black sheep in sight. Only anxiety over illness and grief over death disturbed them as they led their respectable lives.

This strong ‘horizontal’ family unity and lack of ‘vertical’ awareness arose because the two grandfathers had to work for their living, Darwin as a doctor and Wedgwood ‘in trade’. Wedgwood left an immense fortune, and his sons were able to live as gentlemen. Their children, including Charles’s wife Emma (daughter of Josiah Wedgwood II), were brought up in affluence. The Darwins shared in the affluence, because Charles’s father Robert Darwin married Susannah Wedgwood, the wealthy eldest daughter of Josiah I. Robert managed the money well, and his children never needed to work for a living. So the Victorian Wedgwoods and Darwins lived affluently and conformed to a well-known syndrome: they preferred to forget the hard work of their grandfathers that made possible their privileged status.

The main wishes of Charles’s father Robert Darwin were to be respectable, respected and rich. As a result, he sharpened several paradoxes and tensions connected with evolution.



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Erasmus Darwin was much involved in 1765 with Josiah Wedgwood's promotion of the Grand Trunk Canal. In 1767 Wedgwood sent Darwin a big bag of bones found during the excavation of the Harecastle Tunnel north of Stoke. Doctors knew about bones; but not these. Though baffled, Erasmus was still chirpy: 'The horn is larger than any modern horn I have measured, and must have been that of a Patagonian ox, I believe', he wrote. Wedgwood was not deceived by this teasing. The humour was only a cover-up. Erasmus was fascinated and disturbed by these fossil remains of large extinct creatures. He knew that his own father, Robert, had discovered what is today recognized as the first fossilized skeleton of a large part of a plesiosaur: it was described in the *Philosophical Transactions of the Royal Society* in 1719, and is now on display at the Natural History Museum in London.

After rattling the bones around in his mind, Erasmus soon adopted what was later called the theory of common descent, the belief that all life seen today is descended from one microscopic ancestor – a 'single living filament' as he later called it. The theory obviously implies that species change over long ages, and explains the unearthed fossils of unknown animals.

The Darwin family coat-of-arms sported three scallop shells; so Erasmus added the motto *E conchis omnia*, or 'everything from shells'. In 1770 he had the arms and motto painted on his carriage. Erasmus lived in Lichfield at the edge of the Cathedral Close, and Canon Seward of Lichfield Cathedral soon noticed the motto. He wrote a satirical poem, accusing Erasmus of 'renouncing his Creator':

Great wizard he! by magic spells
 Can all things raise from cockle shells,

with much more in the same vein. Thus exposed, Erasmus had to paint out the motto on his carriage: he could not risk offending the rich patients on whom his livelihood depended. But he kept *E conchis omnia* on his bookplate – and presumably did not lend any books to the satirical Canon.

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Erasmus eventually published his mature views on evolution (as we now call it) in 1794, tucked away near the end (pages 482–537) in Volume I of his *Zoonomia*. Here, and more explicitly in his last poem *The Temple of Nature*, he confidently expresses his view that life has developed over ‘millions of ages’ from microscopic specks arising spontaneously in primeval seas, through fishes and amphibians to land animals and ‘humankind’. In the poem he gives vivid pictures of the struggle for existence among animals and plants, and the consequent ‘survival of the fittest’ (though not using these words, which came later).

In *Zoonomia* he notes how changes in the forms of animals during their lives (tadpole to frog, etc.) show that change is rife in nature. He discusses the effects of artificial selection in modifying species, noting that monstrosities (mutations) are often inherited. He proposes a theory of heredity in terms of ‘fibrils or molecules’ from male or female, which combine to produce the new embryo. ‘Lust, hunger and security’, he says, are the controlling forces of change: animals become adapted to their food supply, for example the varied beaks of finches; mimicry and protective coloration are important. He defines sexual selection: in species where the males ‘combat each other’ for ‘exclusive possession of the females’, the outcome is, he says, ‘that the strongest and most active animal should propagate the species, which should thence become improved’.

Charles Darwin read *Zoonomia* when he was sixteen or seventeen, and also listened to a panegyric in praise of evolution from his friend Dr Robert Grant at Edinburgh University. ‘At this time I greatly admired the *Zoonomia*’, he says. But neither Grant nor *Zoonomia* had ‘any effect on my mind’. This is true: otherwise he would have become an evolutionist before going on the voyage of the *Beagle*, rather than after. There is a major paradox here, perhaps best explained by assuming that the voyage quite transformed him.

Several ironies hover round Dr Robert Darwin, the son of Erasmus and the father of Charles – sometimes called the missing

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link between them. Robert was dominated by his father, who organized his education so efficiently that Robert was practising as a physician in Shrewsbury at the age of twenty; and he was immediately successful, even though he never wanted to be a doctor. Robert also found himself elected a Fellow of the Royal Society at the age of 21.

Robert reacted against his father by refusing to do any more science and by seeking to lead a life of privacy and respectability, rather than of public exposure. In this he was constant, consistent and conservative throughout his adult life. But by then he already held many fixed ideas imbibed from Erasmus. Robert, like his father, would gain the confidence of patients by sympathy, careful observation and, if appropriate, boundless optimism. Robert abstained from alcohol, as Erasmus had done. Robert was sceptical of religion, and was an undeclared unbeliever, according to Charles. Robert also adopted his father's belief in evolution, and seems to have done so quite enthusiastically: Robert was not an activist, and yet he took the trouble to have a bookplate made with the dreaded motto *E conchis omnia*. It can be seen in many of his books now in Cambridge University Library.

When Robert was 32, already married to Susannah and quite set in his ways, the official backlash to *Zoonomia* struck. The war against the French was going badly in 1797, with Napoleon rampant in Europe and the British Navy in mutiny. A new magazine was begun in 1798, to boost morale and combat all ideas subversive of the established order. Called *The Anti-Jacobin*, it was controlled by George Canning, a junior government minister and later Prime Minister. With two collaborators, Canning set out to destroy Erasmus's reputation with a poem called *The Loves of the Triangles*, in parody of Erasmus's poem *The Loves of the Plants*, and backed up by long notes ridiculing Erasmus's ideas, particularly the absurd notion that human beings evolved from lower forms of life. This onslaught pushed Erasmus off his pedestal: his status as the leading poet gradually crumbled, and his evolutionary theory was little heeded. Robert, horrified at this public brawl,

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went underground with his evolutionary beliefs. There is no indication that he renounced evolution: he was set in his ways, and he did bring up his children in an evolution-friendly atmosphere, though he probably never discussed the subject with them.

So, when Charles set off on the voyage of the *Beagle* in 1831, he had not yet arrived at evolution, although his grandfather and father were evolutionists.

This paradox leads to another. Robert was a formidable figure by the 1830s, physically and psychologically. He was 6 feet 2 inches tall and weighed more than 24 stone (152 kg). Charles said ‘he was the largest man I ever saw’. And when Robert was in a room, all talk had to be directed to him. Charles was dominated by him: ‘his reverence for him was boundless and most touching’, as his son Francis remarked. Yet Charles probably never knew of his father’s suppressed belief in evolution.

It was primarily his experiences on the voyage of the *Beagle* that made Charles turn towards evolution on his return in 1836. However, when he began his first notebook on the species question, he entitled the notebook ‘Zoonomia’, and twice referred to Erasmus’s book.

In 1839 Charles wrote to his second cousin William Darwin Fox and asked him, ‘Can you tell me from memory what the motto to our crest is, for I mean to have a seal solemnly engraved’. So Charles was unaware of *E conchis omnia*, the motto that adorned so many of his father’s books, and also those he inherited from Erasmus. Did Charles forget? Did he never see his father’s books? The reply from Fox would only have misled him, because Fox was the grandson of Erasmus’s elder brother William, and would only have known the motto of the elder branch of the family, *Cave et aude*, ‘take care and be bold’.

Piling paradox on paradox becomes exhausting, and I shall cease doing so. Many more can be found in Ralph Colp’s richly referenced paper on ‘The relationship of Charles Darwin to the ideas of his grandfather, Dr Erasmus Darwin’, in *Biography*, Vol. 9, pp. 1–24 (1986). Further details of the facts, and references

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for the quotations, can be found in Colp's paper and in my biography *Erasmus Darwin: a Life of Unequaled Achievement* (London: de la Mare, 1999), particularly pages 78, 89–91, 297–301, 358–9 and 363–8. A beguiling panorama of the Darwin–Wedgwood extended family emerges from Edna Healey's book *Emma Darwin* (London, Headline, 2001; paperback, 2002).



The writing of Charles's *Life of Erasmus* was a remarkably rapid international enterprise. All the action occurred in 1879, twenty years after the publication of the *Origin of Species*. By now Charles had achieved world renown for his work on biological evolution by natural selection. His 70th birthday, on 12 February 1879, was celebrated in a special issue of the German science journal *Kosmos*, and the final article, by Ernst Krause, was on 'Erasmus Darwin, the grandfather and forerunner of Charles Darwin'. On 9 March Charles wrote to Krause, offering to have this 28-page article translated into English by William Dallas. In reply, Krause politely offered to enlarge his essay. Charles agreed, and said he would write a 'preface'. He next asked several cousins what they knew about Erasmus. They responded well; and Charles himself then found he already had some boxes with letters written by Erasmus.

Charles began writing his 'preface' in mid-May and, boosted by the new materials, it grew into a 'Preliminary Notice' of about 100 pages, which he finished early in June. He sent it for printing, and in July received proofs, which he showed to a number of relatives. Several of them were favourably impressed, but his daughter Henrietta, who had helped him with previous books, thought it 'dull' and 'too long'. His son Leonard was also critical and suggested that Henrietta should cut up the proofs, rearrange the pieces, and reduce the length.

Disappointed by these reactions – 'never again will I be tempted out of my proper work' – Charles returned to his scientific research and left Henrietta to do the cutting up and cutting down.

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Meanwhile Dallas finished translating Krause's enlarged essay in August, and John Murray agreed to publish the book. It came out in November.

Charles's 'Preliminary Notice' filled 129 small pages and was 50% longer than Krause's 86-page essay. As Charles had only meant to write a preface, the title-page reads: 'Erasmus Darwin, by Ernst Krause'; then, lower down and in smaller type, 'With a Preliminary Notice by Charles Darwin'. In 1887, after Charles's death, a second edition was brought out by his son Francis, who added a synopsis and changed the title-page to: 'The Life of Erasmus Darwin by Charles Darwin'; Krause is reduced to smaller type.

My bare summary of the events of 1879 has left Henrietta with rather a negative role. This is unfair to her. It was at Charles's request that she cut up and cut down the text: he had been very grateful for her help with *The Descent of Man*, and trusted her to make improvements. Most of her cuts are well chosen, though some have to be called censorship; and her stylistic changes are nearly all for the better. She was later very successful in editing *Emma Darwin: a Century of Family Letters* (1904).

The paradoxes that haunt this Introduction now re-emerge for a final fling: 'The Life of Erasmus Darwin, by Charles Darwin' does not appear in its own right in the thousand-volume *National Union Catalog*, and the book is very often omitted altogether in bibliographies of Charles Darwin. Such omissions are insulting to Charles, who worked hard on the book. His known surviving correspondence for 1879 includes 189 letters concerned with the book. What a paradox *par excellence* if this present edition is itself doomed to be catalogued under 'Krause'!

The Text of the Present Unabridged Edition

This edition is based on the corrected first proofs in the Darwin Archive at Cambridge University Library (DAR 210.11:45), and uses the title of the second edition (1887). I have included about

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three pages of additional material inserted in the 1879 book with Charles's approval.

My aim has been to make the text as clean and readable as possible. Henrietta's deletions have been restored and *printed in italics whenever they exceed five words*. I have silently accepted most of Henrietta's stylistic changes, but have not adopted her rearrangement of the text, because the original arrangement seems more logical.

Charles's numerous footnotes are of two distinct types, which I have treated differently. Notes of type 1 are narrative text that adds to the story. I have inserted these at suitable places in the main text, *placing them within curly brackets: { . . . }*. Notes of type 2 merely give the sources of quotations. For these I have inserted a superscript number at the appropriate place in the main text, the content of the note being printed in the List of Charles Darwin's References at the end.

Fortunately, the titles of books are not italicized in the proofs or the 1879 book, but are set within single quotes, e.g. 'The Botanic Garden'. This style has been preserved, as have the notation for dates and several other standard conventions of the time, such as Mr. (with a dot). In the proofs and the book, most quotations are set between double quotes: ". . .". This style is preserved for quotations of fewer than five lines: longer quotations are inset instead.

I have corrected Charles Darwin's factual errors, and have recorded, within square brackets immediately afterwards, the original erroneous text, preceded by the words 'C.D. has'. For example:

Dr. Darwin married the widow of Colonel Edward Pole [C.D. has 'Colonel Chandos Pole'] of Radburn Hall. . . .

After the text and References come my quite lengthy 'Notes on the Text'. They include: explanations of C.D.'s errors mentioned above; sources, manuscript or published, for C.D.'s many

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unreferenced quotations; brief identifications of about 130 people named; information to fill gaps or obscurities in C.D.'s episodic presentation; and comments on curiosities in the text.

After the Notes there is a Chronology of Erasmus Darwin's life (Appendix A); a selective Darwin family tree (Appendix B); a list of selected relevant books and papers (Appendix C); an outline of Krause's essay (Appendix D); and a table linking the page numbers in the 1879 book with those in the proofs – an editor's nightmare unravelled (Appendix E).

If we exclude the long quotations in small type (from letters or other books), Charles's original text runs to 1644 lines and the deletions total 266 lines, or 16%.