

DARWIN,  
HIS DAUGHTER,  
*and* HUMAN  
EVOLUTION

RANDAL KEYNES

RIVERHEAD BOOKS

*New York*



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## GOD'S SHARP KNIFE

*Providence, design and suffering—Return to Malvern—  
Emma's faith—Spiritualism*

THROUGHOUT THE 1860S, Charles thought again and again about the puzzle of suffering and the sense of order in the natural world, and the mystery only deepened. He first explained his growing doubts to Asa Gray, an American naturalist and friend. Commenting on the “theological view” of his theory, he said: “This is always painful to me. I am bewildered.” He held firmly to his long-standing belief that God took no special interest in the fate of individuals. “The lightning kills a man, whether a good one or bad one, owing to the excessively complex action of natural laws.” Did Gray believe “that God *designedly* killed this man? Many or most persons do . . . I can't and don't.” Instead, he was inclined to look at everything as resulting from the operation of God's “designed laws, with the details, whether good or bad, left to the working out of what we may call chance.” He wrote later that it was “more satisfactory to attribute pain and suffering to the natural sequence of events.” He was prepared to allow that when God set the laws, he foresaw every eventuality. But he found that notion so all-embracing that it was valueless. “It may be said that when you kick a stone, or when a leaf falls from a tree, that it was ordained before the foundations of the world were laid exactly where that stone or leaf should lie. In this sense the subject has no interest for me.”

Charles had always shared the common wish to see “evidence of

design and beneficence” in the natural world. He had rejected the claim of natural theology that every species had been separately contrived by an all-powerful Creator, but commented to Gray and Hooker that he could not “view this wonderful universe, and especially the nature of man” “as the result of blind chance” or “brute force.” Yet still, he could not see the evidence of design and beneficence “as plainly as others do.” “There seems to me too much misery in the world.” He gave examples from nature like the huge numbers of ichneumons, wasp-like insects which feed on the living bodies of caterpillars, but his word “misery” clearly applied to human suffering and grief.

Annie’s cousin Snow Wedgwood had grown into a serious young woman with a strong interest in the harmonies and discords between her uncle’s theory and her own deeply felt Christian morality. She set out the problem in an essay which was published in *Macmillan’s Magazine* in 1861. When Charles was shown a copy, he found that she gave a correct account of his argument, and that, he told her gratefully, was a “rare event” with his critics. She was concerned that in his account of natural selection, “the work of creation” was carried out by natural forces which had elements of “what in man would constitute sin.” His theory seemed to carry us back to the point when “God saw everything that he had made, and behold, it was very good,” but the theory then revealed a “scene of strife, of bloodshed, of suffering.” “Surely it was not on *this* that the Creator pronounced a blessing! Surely the command ‘Be fruitful and multiply’ did not mean ‘Let every creature engage in an unremitting warfare with its fellows for the means of subsistence!’” Looking throughout nature, she felt it was difficult to avoid the feeling that “something is amiss; something is the work of an evil power.” And we must ask ourselves what it would mean for human nature if we accepted that “man is the result of the predominance among his ancestors of those tendencies which in him are sinful.”

Snow suggested that man and nature both bore the “impress of

imperfection,” and that the task of reconciling that with our belief in Divine omnipotence lay beyond human reason. Trying to make sense of how God had placed mankind in this imperfect world, she suggested that nature bore a lesson at every turn, “that failure, suffering, and strife, and even death, are but the steps by which [man] has been raised to the height at which he finds himself . . . What a depth of meaning do we find in such a view of creation as this, of such mighty changes accomplished through such faint and dim gradations, such innumerable failures for one success, such a slow and such an unpausing movement in the stream of creation, widening towards the mighty ocean!”

Charles wrote to Snow that her conclusions had “several times vaguely crossed” his mind. But when he tried to think the points through, “the result has been with me a maze.” He could not imagine that the universe had not been designed; yet the closer he looked where one would most expect to find design, “in the structure of a sentient being,” the less proof he could see. As he thought about the problem, his sense of order in nature fluctuated, and he found he could not reconcile it with his understanding of the extent of animal and human pain. He could not see how a truly beneficent and omniscient God could have created the order out of that boundless weight of suffering. “I feel most deeply that the whole subject is too profound for the human intellect. A dog might as well speculate on the mind of Newton.”

Around the same time, Charles told Herschel he was “in a complete jumble on the point,” and commented to Gray: “I am in thick mud . . . yet I cannot keep out of the question.” Some years later, he suggested to Hooker that thinking about the riddle was a waste of time, but he still could not stop. “How difficult it is not to speculate.”

Charles’s memories of Annie softened and changed as the years passed, but he still felt for her as he always had since her childhood. The lasting

sense of her loss and the fresh pain of Charles Waring's death deepened his fear of the hurt he would suffer if any of his other children were to die.

Infectious diseases continued to kill many children of both rich and poor throughout the 1850s and 1860s. William Farr's "ledgers of death" showed that for years after its peak in the 1840s, child mortality remained almost as high. In 1857, a new disease, diphtheria, spread from northern France to southeast England, and caused public alarm. Etty suffered an attack with dreadful inflammation of her throat, and as soon as the worst of the crisis was over, Charles wrote to Hooker that she had been "very seriously ill with Dipterithes (or some such name)." In 1862, Leonard almost died of scarlet fever caught at his boarding school in Clapham. For Charles and Emma the "misery of having illness among one's children" grew worse. When Etty was ill, she could sometimes hardly bear it when her father came to see her, because his concern and emotion were "too agitating."

Charles revealed his fears and stress most clearly in 1863 when he and Emma returned at last to Malvern and saw Annie's grave. His sickness had recurred through the years after the publication of *The Origin of Species*. He talked often with Emma about returning to Malvern for treatment by Dr. Gully, but was torn between the hope of relief from his illness and the fear of reviving his memories of Annie's last days. In the first months of 1863, Horace developed a chronic stomach complaint; Charles was vomiting frequently, and in June he told Hooker he was "languid and bedevilled."

Charles found it difficult to work, but watched a wild cucumber plant growing in a pot in his study. A neighbour's gardener, for whom he had great respect as an observer, believed the tendrils could see, because wherever he placed the plant, its tendrils found any stick quickly. Charles had long had a special interest in plant shoots. In the Brazilian forests in 1832 he had seen them growing, and had watched

entranced. One day he wrote in his pocket notebook: "Twiners entwining twiners—tresses like hair—beautiful Lepidoptera—silence." Now looking at the plant in his study from hour to hour, Charles spotted the circular sweeping of the tendrils, now clockwise and now anti-clockwise, as they searched for an object to attach themselves to. He suggested to Hooker that the tendrils had "some sense, for they do not grasp each other when young."

Emma urged Charles to take the family to Malvern for a month or two to see if Dr. Gully's treatment could relieve his symptoms, and after a fortnight of sickness in August, he agreed. Emma travelled ahead, and took a house for their stay. She went at once to the churchyard to find Annie's grave, but looked from headstone to headstone in vain. The sexton told her that the churchyard had been altered a few years before and the stone might have been stolen. When Charles arrived, he wrote at once to Fox to ask if he could remember from his visit in 1856 where the grave was. "We want, of course, to put another stone." Fox replied immediately that it was "among several tombs which have shrubs and trees thickly planted round them . . . It was a good strong upright stone, and I remember well 'To a good and dear child.'" Charles and Emma then sought out Eliza Partington, who was still at Montreal House, and with Fox's information and her help, they found the headstone. It was shaded by trees and looked so green and old that Emma had not thought it could be the one. She wrote to Fox: "This has been a great relief."

Finding the stone and reading the words he had chosen for Annie, now patched by lichen after twelve years, seems to have helped Charles in coming to terms with his memories of her death, but only to a point. As the weeks passed at Malvern, the water treatment had an effect and he made some progress, but he was not at ease with himself. He had a day of "languor," and suffered bouts of "sinking," "swimming," giddiness and distress in the night.



Then, in the chill of early autumn, Hooker wrote to him from Kew in an agony of pain. "My darling little second girl died here an hour ago, and I think of you more in my grief than of any other friend." Maria was six. Charles wrote back at once, but the following day he suffered "much swimming in head." Hooker's next letter opened: "Dear old Darwin, I have just buried my darling little girl and read your kind note." Hooker wrote about his devotion to his daughter, "the companion of my walks, the first of my children who has shown any love for music and flowers, and the sweetest tempered affectionate little thing that ever I knew. It will be long before I cease to hear her voice in my ears or feel her little hand stealing into mine by the fireside and in the garden. Wherever I go she is there."

Charles replied with a restrained effort at consolation, as he had tried long before with Fox. "I understand well your words 'Wherever I go, she is there.' I am so deeply glad that she did not suffer so much, as I feared was inevitable. This was to us with poor Annie the one great comfort. Trust to me that time will do wonders, and without causing forgetfulness of your darling." These two comforts were the consolations that he and Emma had relied on, but behind his calm words, he was deeply shaken by the sense of what his friend was going through, and was overcome by another wave of feeling. "I am very weak and can write little . . . My head swims badly, so no more."

Charles and Emma stayed on at Malvern for another two weeks, but his head kept swimming; he grew very weak, and eventually he "could not walk a step but from one room into another." Watching him with concern, Dr. Gully decided that he was too ill for the water treatment, and the family returned to Down. It was a relief to be back at home and Charles tried hard to recover, walking a little further every day. In the last week of October, he "accomplished twice round the Sandwalk," but he was unable to work or write letters to anyone. Hooker, not aware of his state of mind, wrote frankly to him again about his

grief for Maria. "I am very well, but it will be long before I get over this craving for my child, or the bitterness of that last night. To nurse grief I hold is a deadly sin, but I shall never cease to wish my child back in my arms as long as I live." In a postscript he added that he had just learnt that his son William had scarlet fever but was recovering.

Hooker's letter shook Charles deeply. In the few days after receiving it, he tried to reply but could not manage to write anything. Eventually, at the end of the month, he penned a brief note which was unlike any other he ever sent. "My dear old friend, I must just have pleasure of saying this. Yours affect[ionatel]y C. Darwin." He added a short postscript that he had a letter from a geologist. "I do not know whether you would care to see it. It has something on spreading of European plants." He could not focus on what the letter said. His own message, lamely inconsequential as it was, was a reaching out to his closest friend in the memory of his own pain.

During the following days, he tried again many times to write to Hooker, but still could not find words to put on the page. A physician came from London to examine him and suggested that "a little head-work" might help. Charles's mind kept swimming, but a week later he managed to write to Hooker about a botanical matter, explaining: "I have tried many days to write to you, but could not." He hoped he could recover. "Unless I can, enough to work a little, I hope my life may be very short, for to lie on sofa all day and do nothing but to give trouble to the best and kindest of wives and good dear children is dreadful."

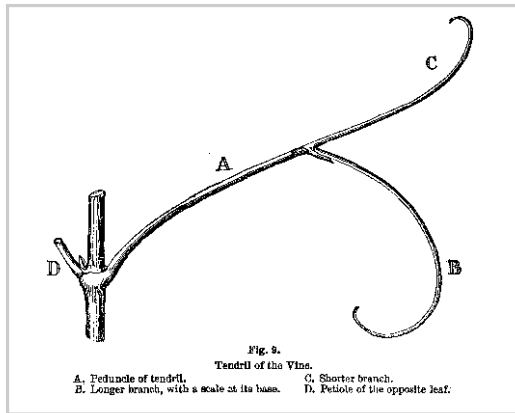
As the days passed, Charles could not concentrate on any work or practical matters, but sat in his study watching another climbing plant growing in a pot on the table next to the sofa. It was a wax flower from Queensland which Hooker had sent him from Kew. In the third week of November, he jotted scrappy notes as a shoot circled near an arm of the sofa, and then back past a bell glass, a copy of Lyell's *Principles of*

*Geology* next to it, and the *Post Office Directory*. The day after the tendril reached the *Directory*, he was at last able to write again to Hooker, but he had to ask him to “excuse my jumping from subject to subject.” “The more I look at plants, the higher they rise in my mind; really the tendril-bearers are higher organised, as far as adapted sensitivity goes, than the lower animals.” He had looked again at Hooker’s letters about his daughter Maria. “How well I remember your feeling, when we lost Annie, that it was my greatest comfort that I had never spoken a harsh word to her. Your grief has made me shed a few tears over our poor darling; but believe me that these tears have lost that unutterable bitterness of former days.” He was “so glad” to hear that Hooker’s son William was recovering from scarlet fever, and ended: “Goodbye. I am tired.”

In the last week of November, Hooker wrote to say that William had relapsed. Charles wrote back at once. “I grieve to hear about the scarlet fever.” He had learnt that his own sister Susan was now very ill with the disease. Thinking again of Hooker’s worry for his child, he ended his letter with a short string of remarks in which he voiced his feelings about the strength and pain of human affection with utter simplicity and directness. “I shall be glad to hear sometime about your boy, whom you love so. Much love, much trial, but what an utter desert is life without love. God bless you. C.D.”

Writing to Hooker in the first week of December, Charles explained why he cared so much. He hoped that Hooker would have “some lull in anxiety and fear” for his children. “Nothing is so dreadful in this life as fear: it still sickens me when I cannot help remembering some of the many illnesses our children have endured.” Not “when I remember” but “when I cannot help remembering.” The sickening memory of the fear of loss struck again and again.

In the next weeks, Charles experienced “very bad sinkings” and his head swam. He stayed upstairs in his bedroom with one or two climb-



On the Movements and Habits of  
Climbing Plants (1865)

ing plants for company, watching their tendrils reaching, touching and curling round any object they found. As the year turned and the January days passed, he recovered slowly, but fears for children were still eddying round his mind. He wrote to Hooker in the last week of the month: “As I do nothing all day, I often get fidgety and I now fancy that Charlie or some of your family ill. When you have time let me have a short note to say how you all are.” Charlie was one of Hooker’s young sons. This remark was revealing. There was no reason for Charles to worry about Charlie’s health; it was nothing more than a “fancy,” but the idea was clearly preying on Charles’s mind.

Charles’s collapse during October and November 1863, with the days when he could not even put words together for a message to his closest friend, was one of the most severe in his forty years of illness. In the years that followed, Hooker looked to Charles again and again for sympathy when his father, mother and wife died, and on the anniversary of Maria’s death. Charles offered companionship and said what he could to help. On one occasion he wrote: “You have sometimes spoken

to me as if you felt growing old: I have never seen any signs of this, and I am certain that in the affections, which form incomparably the noblest part of a man's nature, you are one of the youngest men that I know." Charles did not dwell on the pain Hooker had lived through any more than he did on his own, but looked instead straight to the love for his children of which the pain was one reflection.

In 1866, when a lady wrote to ask Charles whether his theory about the origin of species was compatible with a belief in God, he replied: "It has always appeared to me more satisfactory to look at the immense amount of pain and suffering in this world as the inevitable result of the natural sequence of events, i.e. general laws, rather than from the direct intervention of God." It was easier to come to terms with pain and suffering if there was no question of a Divine purpose governing the life and death of individuals you cared for.

A few years later, a Dutch writer asked for Charles's views on the grounds for belief in God. He replied that "the impossibility of conceiving that this grand and wondrous universe, with our conscious selves, arose through chance, seems to me the chief argument for the existence of God," but if we assumed a First Cause, "the mind still craves to know whence it came, and how it arose." He went on: "Nor can I overlook the difficulty from the immense amount of suffering through the world . . . The safest conclusion seems to me that the whole subject is beyond the scope of man's intellect; but man can do his duty."

Emma devoted her life to caring for Charles and running the household so that he could work without distraction. She claimed to take no interest in his work, but helped with experiments and read proofs of his books when he needed her help. Francis remembered that when he was ill or in

distress, “he depended entirely on her presence to make his discomfort bearable. And she would often sit drumming on his head as he lay down.”

Emma kept her deep thoughts and feelings to herself, but broke her reserve on one occasion. Sometime before or in June 1861, she looked after Charles while he suffered a few weeks of acute sickness. She wrote a note to him. “My heart has often been too full to speak or take any notice . . . I find the only relief to my own mind is to take it as from God’s hand, and to try to believe that all suffering and illness is meant to help us to exalt our minds and to look forward with hope to a future state.” When she saw his patience and sensed his gratitude to her, she could not help “longing that these precious feelings should be offered to Heaven for the sake of your daily happiness.” But she found it difficult enough for herself. “I often think of the words ‘Thou shalt keep him in perfect peace whose mind is stayed on thee.’ It is feeling and not reasoning that drives one to prayer.” She ended the note with the same diffidence she had shown in her two letters to Charles over twenty years beforehand. She felt “presumptuous” in writing to him. “I shall keep this by me till I feel cheerful and comfortable again about you, but it has passed through my mind often lately, so I thought I would write it, partly to relieve my own mind.”

Emma did, though, manage to give the note to Charles, and he wrote on it: “God Bless you. C. D. June 1861.”

When Etty was ill in the early 1860s, Emma would read to her. William Cowper, the evangelical poet of the 1780s, was one of her favourite authors, and Etty remembered her reading from his “Winter Walk at Noon.” In one insistent passage Cowper argued against the Deist view of a remote Creator which Charles had adopted, asserting instead that God was everywhere and in everything.

*The Lord of all, himself through all diffused,  
Sustains and is the life of all that lives.*

*Nature is but a name for an effect  
Whose cause is God . . .*

For those like Emma who hoped for the Last Judgement and a life after death, Cowper offered a quiet approach to their final destiny.

*The groans of nature in this nether world  
Which heaven has heard for ages, have an end . . .  
The time of rest, the promised sabbath comes.  
Six thousand years of sorrow have well-nigh  
Fulfilled their tardy and disastrous course  
Over a sinful world. And what remains  
Of this tempestuous state of human things,  
Is merely as the workings of a sea  
Before a calm, that rocks itself to rest.  
For he whose car the winds are . . .  
Shall visit earth in mercy; shall descend  
Propitious, in his chariot paved with love,  
And what his storms have blasted and defaced  
For man's revolt, shall with a smile repair . . .  
Thus heavenward all things tend. For all were once  
Perfect, and all must be at length restored.  
So God has greatly purposed . . .*

A few years later, Emma read two books by Ashton Oxenden, an Anglican clergyman whose devotional writings were popular for their plain and simple language. In *Words of Peace; or the Blessings and Trials of Sickness* he wrote: "What are God's reasons for afflicting us? Is it to *punish*? Sometimes it is; but not, I think, usually . . . There must be *another and truer reason* why the Lord chastens. It is because *He desires to do you some great good*. The gardener cuts and prunes his tree, to make it grow

better, and bear more precious fruit; and God often uses His sharp knife for some gracious purpose . . . *God cannot afflict wrongly.* He never makes mistakes . . . Before then you go a step further, ask God to convince you of this precious truth—It is my Father who corrects me, even He who loves me.” In *Fervent Prayer*, Oxenden wrote about the “spirit of unbelief which is ever creeping into the hearts of God’s people, tempting them to feel that the Lord is far off, that their prayers will not be heard, and that it is useless to seek Him. Who has not felt something of this?” We should constantly implore God “to give us that faith, which is not in us naturally, but which comes from Him. ‘Lord, I believe; help thou my unbelief.’”

During these years, Charles and Emma were as close to each other as ever in their marriage, but the “painful void” which Emma had spoken of just before their wedding still lay between them. Unable to share her faith with Charles, Emma felt it weaken. Etty wrote that “As years went by her beliefs must have greatly changed, but she kept a sorrowful wish to believe more, and I know that it was an abiding sadness to her that her faith was less vivid than it had been in her youth.”

Emma’s feelings for Annie remained as deep as ever. In April 1875, Aunt Fanny Allen, who had been with her at Down when Annie died, was ninety-four and the last survivor of Emma and Charles’s parents’ generation. Emma wrote to her as she approached death. The letter does not survive, but Aunt Fanny replied that Emma’s “grateful remembrance of the sad April days of ’51 makes my heart beat with gratitude to you for its recollection, coupled as it was by the memory of your grief for your darling.” Taking up what Emma had said, Aunt Fanny went on: “It is true gaps can never be filled up, and I do not think we should wish them to be filled other ways than as our memory fills them.”

. . .



While Charles and Emma lived with their private thoughts and worries, they presented a picture of ease and contentment to the world. In 1869, Henry James, then a young American visitor to London and as yet unknown as a writer, accompanied a friend to lunch at Down. He wrote to his family that the Darwins' carriage met them at Bromley Station, and they "rolled quietly along through a lovely landscape, between springing hedges and ivy-crowned walls . . . ineffably verdurous meads and tender-bursting copses . . . fine old seats and villas." "Darwin's house is a quiet old place . . . We lunched and spent an hour and a half seeing the old man, his wife and his daughter. Darwin is the sweetest, simplest, gentlest old Englishman you ever saw . . . He said nothing wonderful and was wonderful in no way but in not being so."

Within the privacy of the household, Charles revealed a growing dislike of established religion. While Emma was reading *Fervent Prayer*, he subscribed to *The Index*, a newspaper produced by a group of disaffected American Unitarians and philosophical unbelievers. The paper advocated a spirit of reform "without deference to authority of Bible, Church or Christ." It argued for rejection of the Christian confession, and proposed in its place a humanistic "Free Religion" in which "lies the only hope of the spiritual perfection of the individual and the spiritual unity of the race." Charles allowed the editor to print in each issue a comment by him endorsing these views, and pressed the newspaper's claims in conversation with his sons and daughters. Francis remembered how his father would tell the family "the most extraordinary facts" from the newspaper and was indignant with anyone who doubted their complete accuracy.

In his published writings Charles paid lip service to Christian belief, but his words were carefully chosen and non-committal, as when he wrote in *The Descent of Man* that "the question whether there exists a Creator and Ruler of the universe . . . has been answered in the affirmative by some of the highest intellects." He made occasional tongue-

in-cheek comments, suggesting, for instance, that there might be a link between religious devotion and “the deep love of a dog for his master, associated with complete submission, some fear, and perhaps other feelings.” He commented on the primitive origins, or “natural history,” of religious belief. The idea that “natural objects and agencies are animated by spiritual or living essences, is perhaps illustrated by a little fact which I once noticed: my dog, a full-grown and very sensible animal, was lying on the lawn during a hot and still day; but at a little distance a slight breeze occasionally moved an open parasol, which would have been wholly disregarded by the dog, had any one stood near it. As it was, every time that the parasol slightly moved, the dog growled fiercely and barked. He must, I think, have reasoned to himself in a rapid and unconscious manner, that movement without any apparent cause indicated the presence of some strange living agent, and that no stranger had a right to be on his territory.” In *The Expression of the Emotions in Man and Animals* he wrote about the torment of eternal punishment: “There is said to be ‘gnashing of teeth’ in hell; and I have plainly heard the grinding of the molar teeth of a cow which was suffering acutely from inflammation of the bowels.”

Emma and Charles talked together in the 1870s about another form of spiritual life: “manifestations,” the other world and messages from the departed. At a time of intense concern about the natural or supernatural reality of spiritual forces and life beyond death, mediums were coming from America with parlour performances claiming to confirm both. Some men of science took an interest in the phenomena, hoping they could find sound evidence to resolve the issues. Among Charles’s acquaintances, Dr. Gully was a firm believer and Alfred Russel Wallace had been converted in the mid-1860s. Charles took an interest because he wanted his theory to explain as much as could be explained by the

regular working of observable and purely natural forces, and if he had to accept the reality of a separate spiritual realm, human life would have to be approached in a different way.

The mediums played boldly on people's feelings about loved ones who had been taken from them by death. One produced a book, *Heaven Opened; or Messages for the Bereaved from our Little Ones in Glory*. Charles's acquaintance Robert Chambers, the publisher, amateur geologist and secret author of *Vestiges of the Natural History of Creation*, which had argued for evolution many years before *The Origin of Species* appeared, started attending séances in 1853 in a cool and critical frame of mind, watching carefully for fraud. In 1857, he met Daniel Dunglas Home, a charismatic showman from America, and was greatly impressed by his performances. He took copious notes of a number of sessions and decided that the phenomena compelled a reasonable man to believe in a "spiritual agency," immortality and the hereafter, as no other explanation would fit what he had witnessed. At a séance in 1860, an accordion was provided and Chambers called for his deceased father to play his favourite Scottish and English tunes. "Ye Banks and Braes" and "The Last Rose of Summer" were sounded as if by magic, and Chambers told the company that they had indeed been his father's favourite airs. Home was always seeking public endorsements from men of science and other prominent figures, but Chambers was not prepared to give him one, and Home's friends kept working on him quietly.

Chambers had lost two daughters and was greatly affected by their deaths. In 1866, Home formed a society called the Spiritual Athenaeum with Dr. Gully and some other friends, one of whom knew Chambers's family. At two meetings, Home saw the spirits of the two daughters; one gave a message to be passed on to their father, and the other gave the last words she had spoken to him, "Pa, love," to prove their identity. The society wrote to Chambers and he confirmed that those

were his second daughter's last words. The message was then sent to him; he acted on it and was convinced it was genuine. He now openly declared his support for Home, and wrote to Wallace: "My idea is that the term 'supernatural' is a gross mistake. We have only to enlarge our conceptions of the natural and all will be right." It is strange to realise that if Home and his friends had thought the notorious Mr. Darwin might welcome a message from a loved daughter beyond death, and Dr. Gully had told them about Annie, Home might have received a table-tapping from her.

An ambitious chemist, William Crookes, who discovered the element thallium in 1861 and later experimented with cathode rays, launched a personal inquiry into "psychic force" in the early 1870s. Like Chambers, he was alert to the possibility of fraud; he kept careful notes through a series of Home's séances, and was impressed by what he saw. In April 1871, Home held a séance for Crookes and a group of friends. Crookes recorded that "At first we had very rough manifestations, chairs knocked about, the table floated about six inches from the ground and then dashed down, loud and unpleasant noises bawling in our ears and altogether phenomena of a lower class. After a time it was suggested that we should sing, and as the only thing known to all the company, we struck up 'For he's a jolly good fellow' . . . After that D.D. Home gave us a solo—rather a sacred piece—and almost before a dozen words were uttered Mr. Herne was carried right up, floated across the table and dropped with a crash of pictures and ornaments at the other end of the room."

Charles was interested in Crookes's inquiry, and his cousin Francis Galton reported to him about a séance he had attended with Crookes in April 1872. The table moved while Galton was sitting under it checking for deception, and "beautiful sacred music" was played on the accordion. He wrote to Charles about another occasion that "The absurdity on the one hand, and the extraordinary character of the thing

on the other, quite staggers me; wondering what I shall yet see and learn, I remain quite passive with my eyes and ears open.”

In 1874, Charles’s brother Erasmus arranged a séance with a paid medium at his house in Mayfair. Charles, Emma and Etty attended, together with George Eliot and her partner G. H. Lewes, the journalist and philosopher. Mr. Lewes was firmly and openly doubtful, and Erasmus was almost certainly hoping for quiet entertainment, watching in the darkness. Etty remembered that Mr. Lewes “was troublesome and inclined to make jokes and not play the game fairly.” The usual manifestations occurred, “sparks, wind-blowing, and some rappings and movings of furniture.” Emma watched and kept an open mind. Charles, on the other hand, found it so hot and tiring that he went away, as he wrote to Hooker, “before all these astounding miracles, or jugglery, took place.” “The Lord have mercy on us all, if we have to believe in such rubbish.”

Charles and Emma’s niece Snow discussed the séance with Emma when she was staying at Down a few months later. Snow wrote to a friend that Emma thought Charles had “quite made up his mind he *won’t* believe it, he dislikes the thought of it so much.” Referring to a remark Charles had once made to her, Snow asked Emma if he did not say it was a great weakness to allow wish to influence belief. Emma replied: “Yes, but he does not act up to his principles.” Was that not bigotry? Emma replied with heavy irony: “Oh yes, he is a regular bigot.” The sharpness of her comment suggests she may have felt it was more difficult for her to keep her open mind and her hope of salvation, than it was for him to reject religion as he did in the name of scientific reason.

## THE DESCENT OF MAN

*Descent of Man—Expression of the Emotions—  
Biographical Sketch of an Infant*

IN 1869, CHARLES DECIDED AT LAST that he must tackle the issue of human origins himself. He explained to a friend: “I am thinking of writing a little essay on the Origin of Mankind, as I have been taunted with concealing my opinions.” After completing *The Variation of Animals and Plants Under Domestication*, the last part of his main argument about the origin of species, he began work on *The Descent of Man*. The book, which eventually appeared in 1871, dealt first with the animal ancestry of mankind and how we became human, and then tackled the controversial question of human race, introducing the idea of evolution by sexual selection to explain racial differences.

On the first theme, Charles thought back to Jenny the orang; he remembered his ideas about the natural origins of the moral sense, and he read David Hume’s moral philosophy again. He took up Hume’s suggestion that the “social virtues” were part of our instinctive makeup rather than the product of reasoning from abstract principles, since they had a natural appeal to “uninstructed mankind” long before we had received any “precept or education.” He thought again about his “natural history of babies,” and remembered all he had learnt from Annie and after her death about the strength of a parent’s love and how memory lasted. He wove his observations as a naturalist together with his own experiences into a view of human nature which looked beyond received ideas.

The book was widely read, and was not criticised as fiercely as Charles had feared. The times were changing and Charles was encouraged to follow up the book with two more works on aspects of human nature, *The Expression of the Emotions in Man and Animals* and “A Biographical Sketch of an Infant.” As things worked out, few of his themes were taken further in his lifetime, but they have been since. The subjects are still as bedevilled by controversy and prejudice as they were in Darwin’s day, but that is hardly surprising when it is the buried history of our own nature that we are arguing about.

Charles was thinking about *The Descent of Man* in early 1870 when Etty, now a young lady of twenty-seven, was wintering in Cannes. Emma wrote to her that Charles was working on his new book. “I think it will be very interesting, but that I shall dislike it very much as again putting God further off.” She was to repeat that phrase a year later in a comment to a friend when the book was published. Her off-hand remarks touched again on the “painful void” between Charles and herself as he held to his idea of a remote and mysterious Deity while she tried to maintain her faith in Cowper’s loving God who was present everywhere and was “the life of all.”

Charles sent Etty a chapter of *The Descent of Man*, explaining that its object was “simply comparison of mind in men and animals.” He feared that “parts are too like a sermon; who would ever have thought that I should turn a parson?” He asked Etty for “deep criticism” and any corrections of style. He knew that she was close to him in much of her thinking. She believed in the essential unity of mind and matter; she saw disease and death as purely natural processes; she had doubts about life after death, and one of her few convictions was “the worship of humanity.”

With a characteristic preference for things unconnected with

Charles's "stiff" ideas, Emma added a wry footnote to his letter. Etty had written about the hotel in Cannes, and her mother replied: "How very odd the meat being so bad. One would have thought with a population of rich invalids, that would have been the first thing to attend to."

In *The Descent of Man*, Charles emphasised our animal origins with a new force and sharpness. He still felt a strong need to puncture human arrogance, but he was now more hopeful that others would agree. It was only our natural prejudice, and "that arrogance which made our forefathers declare that they were descended from demi-gods," which led people to reject the idea of common descent. "But the time will before long come, when it will be thought wonderful that naturalists, who were well acquainted with the comparative structure and development of man, and other mammals, should have believed that each was the work of a separate act of creation." He offered his insistently humble view of man's place in nature with a deadpan sharpness. He repeated the point he had made about the human frame in *The Origin of Species*. "It is notorious that man is constructed on the same general type or model as other mammals. All the bones in his skeleton can be compared with corresponding bones in a monkey, bat, or seal." He now added a number of other points by which the link was shown, though few readers would have been happy to recognise them. Wild baboons like beer, get drunk and are hung over; we share syphilis, cholera and herpes with animals, and we are infested with many of the same parasites. Charles took up a point made by Huxley in his "monkey book." Charles wrote: "As some of my readers may never have seen a drawing of an embryo, I have given one of man and another of a dog, at about the same early stage of development, carefully copied from two works of undoubted accuracy." And he drove the point home with a twist. Anyone who rejected with scorn the belief that the shape of his canine teeth was due to his early ancestors having been given them as weapons, would "probably reveal, by sneering, the



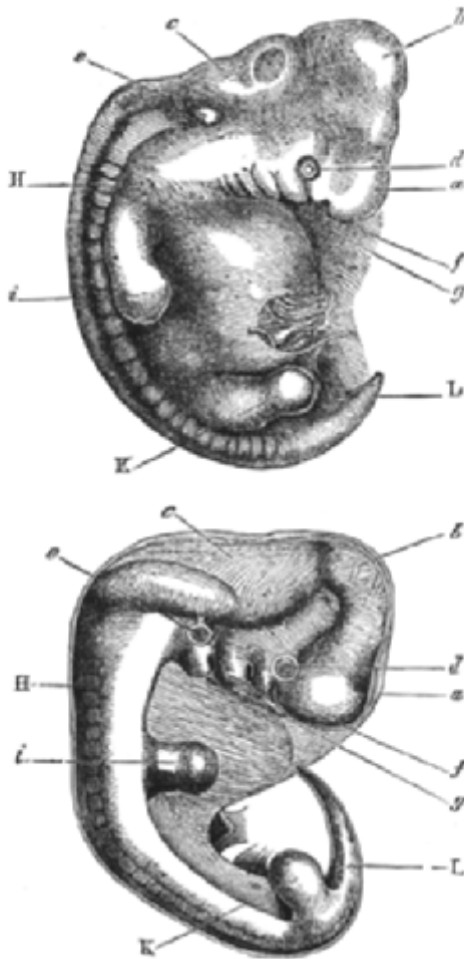


Fig. 1. Upper figure human embryo, from Ecker. Lower figure that of a dog, from Bischoff.

a. Fore-brain, cerebral hemispheres, &c.  
 b. Mid-brain, corpora quadrigemina.  
 c. Hind-brain, cerebellum, medulla oblongata.  
 d. Eye.  
 e. Ear.

f. First visceral arch.  
 g. Second visceral arch.  
 H. Vertebral columns and muscles in process of development.  
 i. Anterior } extremities.  
 K. Posterior }  
 L. Tail or os coccyx.

line of his descent. For though he no longer intends, or has the power, to use these teeth as weapons, he will unconsciously retract his 'snarling muscles' . . . so as to expose them ready for action, like a dog prepared to fight."

Charles gave man "a pedigree of prodigious length, but not, it may be said, of noble quality." He echoed Huxley and Wallace in suggesting that human progress was a matter for admiration and gave hope for the future, but his tone was slightly different from their triumphalism. "Man may be excused for feeling some pride at having risen, though not through his own exertions, to the very summit of the organic scale; and the fact of his having thus risen, instead of having been aboriginally placed there, may give him hope for a still higher destiny in the distant future." He went on to insist, though, that "we are not here concerned with hopes or fears, only with the truth as far as our reason permits us to discover it; and I have given the evidence to the best of my ability."

Charles was now at last prepared to reveal to the world the ideas about the animal roots of human nature which he had explored so freely and boldly in his private notes thirty years before. He worked them up with the fuller understanding of ties and feelings in a close family that he had gained in the thirty years of his life with Emma, their surviving children, and the three who had died. He pointed first to the basic instincts of survival and affection that we share with the lower animals, "self-preservation, sexual love, the love of the mother for her new-born offspring, the desire possessed by the latter to suck, and so forth." The last two he had watched with devoted attention in Emma and their newborn children.

Taking up the ideas that Wallace had put forward in 1864, Charles suggested that "the parental and filial affections, which apparently lie at the base of the social instincts" were probably developed through natural selection. With the bravado of a person who is confident he is right but does not expect to be believed, he added that "Parental affection, or

some feeling which replaces it, has been developed in certain animals extremely low in the scale, for example in star-fishes and spiders. It is also occasionally present in a few members alone in a whole group of animals, as in the genus *Forficula*, or earwigs." It was Etty who had suggested the point; she had always found small creatures and their families absorbing, looking with Annie at her ladybirds in their "little box" in Malvern, watching over the farmyard cats with their kittens in her shed at Down, and caring for the fancy pigeons she had bred with her father.

Moving on to the more complex emotions, Charles suggested that most were also common to the higher animals and ourselves. All humans and other primates "have the same senses, intuitions and sensations, similar passions, affections and emotions, even the more complex ones such as jealousy, suspicion, emulation, gratitude and magnanimity; they practise deceit and are revengeful; they are sometimes susceptible to ridicule, and even have a sense of humour; they feel wonder and curiosity; they possess the same faculties of imitation, attention, deliberation, choice, memory, imagination, the association of ideas, and reason, though in very different degrees." Charles then worked through the attributes which different writers had argued were unique to mankind: Lyell's improvable reason, the fashioning of tools which the Duke of Argyll had suggested was distinctively human, abstract thought, self-awareness, language, the sense of beauty and the belief in unknown spiritual agencies. In each case he pointed to features of animal behaviour that might be reckoned to be rudimentary forms of the human capability.

One aspect of his approach was criticised at the time by G. H. Lewes and others. He indulged freely in anthropomorphism, making guesses about the mental processes of animals and describing them in terms of human experience. He was aware of the dangers, and acknowledged that as animals could not speak to humans, we could never understand

their feelings in the way in which we understand each other's. He made the point in a striking image from one of his country walks. "Who can say what cows feel when they surround and stare intently on a dying or dead companion?" One could, though, make inferences. He based his suggestions about animals' feelings and reasoning on a few simple rules which he was willing to explain. He was also always equally interested to determine where animals' mental processes differed from humans', as to identify where there might be similarities. The important point for him was to explore the possibilities either way, and to find where any boundaries could be traced.

Charles's approach had another special feature which he did not recognise and others did not challenge. It was generally agreed that one essential source of knowledge in the science of man was the thinker's awareness and understanding of his or her own mental experience. Charles accordingly made free use of introspection. He assumed that his own feelings and reflections were shared by others, but some of his generalisations from his own experience were open to question. He wrote on memory that "A man cannot prevent past impressions often repassing through his mind." And "Man, from the activity of his mental faculties, cannot avoid reflection: past impressions and images are incessantly and clearly passing through his mind." That was his experience, but his words, "incessantly and clearly" for example, suggest that memories came to him more insistently and vividly than to most people.

Charles also had an acute sense of how others might be judging him, and presumed that other people shared his feelings. A man's "early knowledge of what others consider as praiseworthy or blameable . . . cannot be banished from his mind, and from instinctive sympathy is esteemed of great moment." He repeated the point in a slightly different form. "Even when we are quite alone, how often do we think with pleasure or pain of what others think of us, of their imagined

approbation or disapprobation; and this all follows from sympathy, a fundamental element of the social instincts." He felt the same way about rules on their own. "We recognise the same influence in the burning sense of shame which most of us have felt, even after the interval of years, when calling to mind some accidental breach of a trifling, though fixed, rule of etiquette." Yet again, this sensitivity was not a general truth of human nature, but a special feature of Charles's intense and highly strung sensibility. Most other people have more control over their thoughts, and manage better to overcome, avoid or ignore feelings of shame or guilt.

Charles's account of human awareness was, in this respect, a reading of his own experience. He made the instinctive feeling of sympathy a key notion. He saw it as distinct from love, since "a mother may passionately love her sleeping and passive infant, but she can hardly at such times be said to feel sympathy for it." However, there was a close link; a loved adult or child always received special sympathy, and Charles could never forget his feelings for Annie in her fretfulness and distress throughout her last illness. He saw elements of sympathy in memories charged with feelings, as when he wrote in *The Expression of the Emotions in Man and Animals*, "The vivid recollection of our former home, or of long past happy days, readily causes the eyes to be suffused with tears; but here . . . the thought naturally occurs that these days will never return. In such cases we may be said to sympathise with ourselves in our present, in comparison with our former, state."

Charles saw that humans were essentially social animals like the man-like apes, and the early ape-like progenitors of man were probably social too; they were all likely to have "retained from an extremely remote period some degree of instinctive love and sympathy" for their fellows. In emphasising the instinctive nature of their sympathy, Charles agreed with Wallace that it had probably developed through natural selection, "for those communities which included the greatest number

of the most sympathetic members would flourish best and rear the greatest number of offspring.”

Moving on to the moral sense, Charles acknowledged that it was the most noble of all human attributes, and “by far the most important of all the differences between man and the lower animals.” Recognising the issue to be a second critical test for his theory of evolution alongside the design of the eye, he opened a fresh chapter of his book with Kant’s “great question” about the origin of the sense of duty. He wrote that many others far more able than he had discussed it at length, but he would offer his own answer because he could not avoid the issue, and “as far as I know, no one has approached it exclusively from the side of natural history.”

Charles took up the argument he had written out in 1839, and suggested that we developed our moral sense when, as part of a natural process, early man first achieved self-awareness, remembered his past actions and reflected on his feelings about them. Charles believed that “The social instincts . . . will from the first have given to [man] some wish to aid his fellows, some feeling of sympathy, and have compelled him to regard their approbation and disapprobation. Such impulses will have served him at a very early period as a rude rule of right and wrong. But as man gradually advanced in intellectual power, and was enabled to trace the more remote consequences of his actions; as he acquired sufficient knowledge to reject baneful customs and superstitions; as he regarded more and more, not only the welfare, but the happiness of his fellow men; as from habit, following on beneficial experiences, instruction and example, his sympathies became more tender and widely diffused, extending to men of all races, to the imbecile, maimed, and other useless members of society, and finally to the lower animals, so would the standard of his morality rise higher and higher.”

When he set out his view of the sources of human nature at the end of *The Descent of Man*, Charles explained his feelings about the value of

memory. They were points of moral sensibility, not science, and one of the experiences from which they stemmed was the importance to him of his lasting feelings for Annie. Charles now suggested that “The moral faculties are generally and justly esteemed as of higher value than the intellectual powers. But we should bear in mind that the activity of the mind in vividly recalling past impressions is one of the fundamental . . . bases of conscience. This affords the strongest argument for educating and stimulating in all possible ways the intellectual faculties of every human being . . . Whatever renders the imagination more vivid, and strengthens the habit of recalling and comparing past impressions, will make the conscience more sensitive.” As he had shown twenty years before when he wrote about Annie after her death, he wanted to remember, even when pain came with the memory.

Charles’s ideas echoed themes he and Emma had found in George Eliot’s writings of the 1850s and 1860s. Following Wordsworth’s suggestions about the Romantic imagination, George Eliot saw memory and feeling, self and other, as bound closely together. In *Scenes of Clerical Life*, she had written: “Sympathy is but a living again through our own past in a new form.” In *Adam Bede*, Charles and Emma’s favourite of her novels, she commented on Dinah Morris’s vivid imaginings of Hetty Sorrel’s suffering that “It was in this way that Dinah’s imagination and sympathy acted and reacted habitually, each heightening the other.” At the end of the book, she linked experience and memory with sympathy in another way when she described how Adam never outlived his sorrow for Hetty. “Do any of us? God forbid. It would be a poor result of all our anguish and our wrestling, if we won nothing but our old selves at the end of it—if we could return to the same blind loves . . . the same feeble sense of that Unknown towards which we have sent forth irrepressible cries in our loneliness. Let us rather be thankful that our sorrow lives in us as an indestructible force, only changing its form, as forces do, and passing from pain into sympathy—

the one poor word which includes all our best insight and our best love." She offered another view in Maggie Tulliver's words in *The Mill on the Floss*. "Love is natural, but surely pity, and faithfulness, and memory are natural too. And they would live in me still, and punish me if I did not obey them."

Despite his deeply held view that morality was rooted in the human affections and sympathy, Charles maintained his unflinching sense of the ruthlessness of natural selection as a force shaping instincts, and he also kept the strong sense of the *ad hoc* and imperfect nature of human instincts that he had first expressed when he wrote in his notebook about the "Devil under form of baboon" being our grandfather. He extended the point to morality, and illustrated it deftly by comparing humans with insects. "If . . . men were reared under precisely the same conditions as hive-bees, there can hardly be a doubt that our unmarried females would, like the worker-bees, think it a sacred duty to kill their brothers, and mothers would strive to kill their fertile daughters; and no one would think of interfering." The sharpness of this passage is breathtaking, as it contradicted the moral assumptions of the age.

Charles believed that morality had been perverted repeatedly throughout human history by religious beliefs. Taking the ideas David Hume had offered in his *Natural History of Religion*, Charles wrote that "The same high mental faculties which first led man to believe in unseen spiritual agencies, then in fetishism, polytheism, and ultimately in monotheism, would infallibly lead him, as long as his reasoning powers remained poorly developed, to various strange superstitions and customs. Many of these are terrible to think of, such as the sacrifice of human beings to a blood-loving god, the trial of innocent persons by the ordeal of poison or fire, witchcraft, etcetera. Yet it is well occasionally to reflect on these superstitions, for they show us what an infinite



debt of gratitude we owe to the improvement of our reason, to science, and to our accumulated knowledge . . . These miserable and indirect consequences of our highest faculties may be compared with the incidental and occasional mistakes of the instincts of the lower animals.”

A child Annie had played with in Malvern had become a tragic and sensational victim of the shortcomings of human morality and affections. Marian Marsden, daughter of James Marsden, the water doctor in Malvern, had been Annie’s age. She was as unlucky with her parents and carers as Annie was lucky with hers. Her mother had died when Marian was six; her father fell in love with a young patient and married her, and he then paid his children’s French governess Celestine Doudet to take them to Paris. Dr. Marsden wrote to Mademoiselle Doudet about discipline that “Morals are more important than everything else.” When Marian fell ill in Paris, a group of neighbours wrote to Dr. Marsden claiming that the children were being ill-treated. He asked John Rashdall, the vicar who had conducted Annie’s burial service, to visit them in Paris. Mr. Rashdall found them “as well as could be expected” and reported that when he asked them about Mademoiselle Doudet, they praised her. Shortly afterwards Marian died and a post mortem revealed a fracture in her skull. Dr. Marsden went to Paris and found the other children starved and bruised. He removed them from Mademoiselle Doudet’s care, but Marian’s elder sister died shortly after, “crying out in her delirium that Mademoiselle Doudet had sworn to pursue her, even in death, if she revealed what had gone on in Paris.” She was buried in Malvern churchyard, and her gravestone stands near Annie’s.

Mademoiselle Doudet was tried in Paris for cruelty to the Marsden children and the murder of Marian. The case was reported at great length in a popular periodical, *Les Causes célèbres de tous les peuples*, and the trial was also covered in some English newspapers. One feature of the proceedings was how some actions by Mademoiselle Doudet, seen



*Mademoiselle Doudet with the Marsden children*

by the accusers as murderous cruelty, were claimed by her and other witnesses to be sound discipline, and therefore moral. She was found guilty, but *Les Causes célèbres* voiced widespread sympathy for her. The case pointed obliquely to the relative nature of accepted moral thinking, as it revealed how close some forms of righteous conduct were to evildoing.

When Charles had first thought about the moral sense in 1838, he had suspected that it was “an hereditary compound passion.” He now had a notion of its make-up. “Ultimately our moral sense or conscience becomes a highly complex sentiment—originating in the social instincts, largely guided by the approbation of our fellow-men, ruled by reason, self-interest, and in later times by deep religious feelings, and

confirmed by instruction and habit.” Just as geology had given him the vast time-frame needed for evolution to work in, so philosophy and psychology pointed to mental forces and links operating below personal awareness. The new science of man that he envisaged would not simply trace the complexes of feeling and belief down to one or two supposedly primary factors; it would try to understand the interplay of instinct and conscious thought in order to fathom their workings with each other.

Charles’s view of the moral sense prompted him to think again about the involvement of mankind in the struggle for existence. In one comment linked with Annie’s death, he contradicted a conclusion that many people had drawn from his ideas about the survival of the fittest. Before the appearance of *The Origin of Species*, some commentators had based a theory of social progress on Malthus’s view of perpetual competition in human life. The idea fitted in with the laissez-faire attitude towards the “undeserving poor” which was widely held among prosperous people. When Charles explained his theory of natural selection in *The Origin*, some saw it as further justification for their approach, and applied the idea to the physically unfit. Charles was always respectful towards Herbert Spencer, the social philosopher linked with the ideas which became known as “social Darwinism,” but he often felt that his writings were too abstract, and admitted that he did not understand them.

Charles was particularly unhappy with the argument linking social progress with harsh treatment of people who were “unfit” to survive in the struggle for life, and used an opportunity in *The Descent of Man* to make his point. He wrote: “With savages, the weak in body and mind are soon eliminated; and those that survive commonly exhibit a vigorous state of health. We civilised men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile,

the maimed, and the sick; we institute poor-laws; and our medical men exert their utmost skill to save the life of every one to the last moment." Thinking perhaps of himself and his chronic illness, he suggested: "Thus the weak members of civilised societies propagate their kind." He then argued that what prompted the aid we "feel impelled to give to the helpless is . . . the instinct of sympathy, which was originally acquired as part of the social instincts, but [was] subsequently rendered . . . more tender and more widely diffused." Mindful of his own experience with Annie and others, he went on with the force of his own conviction: "Nor could we check our sympathy, even at the urging of hard reason, without deterioration in the noblest part of our nature. The surgeon may harden himself whilst performing an operation, for he knows that he is acting for the good of his patient; but if we were intentionally to neglect the weak and helpless, it could only be for a contingent benefit, with an overwhelming present evil."

In the year when *The Descent of Man* appeared, Henry Maudsley the psychiatrist lectured on "Body and Mind" at the Royal College of Physicians. Charles noted his suggestion that our moral sense was a recent inheritance, and the link he made with the observation that "a perversion or destruction of the moral sense" was often one of the earliest symptoms of mental derangement. "As the latest and most exquisite product of mental organisation," the moral sense was "the first to testify to disorder of the mind-centres." The point echoed Charles's comment in 1838 about Emma's mother and how her affections had been destroyed when she became demented. Maudsley now shared Charles's view that human feelings were faculties of our organism that needed to be understood as elements in a complex and obscure mechanism which had developed over time and could break down in a pattern. He described strange animal-like traits in the behaviour of

“idiots” and asked whether they might be due to the reappearance of primitive instincts, “an echo from a far-distant past, testifying to a kinship which man has almost outgrown.”

Maudsley visited Charles at Down, and gave more of his darkening view of the human mind in his next book, *Responsibility in Mental Disease*. One passage showed clearly the sea change in thinking about human nature which Charles had helped to bring about, reversing the theologians’ former proud notions of man as the sole rational being. Maudsley opened his last chapter on “The prevention of insanity” with a comment that undermined the complacency of the age about human reason. “Most persons who have suffered from the malady of thought must at one period or other of their lives have had a feeling that it would not be a hard matter to become insane, that in fact something of an effort was required to preserve their sanity.” With his languor, his swimming head, his hysterical crying and the sleepless nights when he could not get a painful idea out of his mind, Charles knew the malady.

Charles had started his next book, *The Expression of the Emotions in Man and Animals*, as a chapter of *The Descent of Man*, but took it out because he found he had more to say than would fit in *The Descent*. One theme was how our common nature with animals extends from body to mind, to our feelings and their expression. He aimed to refute a suggestion by a previous writer, Sir Charles Bell, that the Creator had given us our facial muscles and expressions to enable us to show our feelings to each other for spiritual purposes. He grouped expressions in a number of kinds, and offered explanations of how each had developed by the natural workings of the body. Some he suggested were inherited versions of “serviceable associated habits.” Others he explained by a principle of antithesis whereby an opposite emotion to one with a set response would trigger opposite behaviour, and a third group he

believed were due to an excess of nervous energy spilling over into other channels. Nowadays, most explanations focus on communication, but some refer to habitually associated actions.

Charles described many careful observations he had made of human emotions and their expressions. He dwelt again on intense feelings, and the obscure links between mind and body. He returned to his point in *The Descent of Man* about humans baring their canine teeth. "With mankind some expressions, such as bristling of the hair under the influence of extreme terror, or the uncovering of the teeth under that of furious rage, can hardly be understood, except on the belief that man once existed in a much lower and animal-like condition . . . No doubt as long as man and all other animals are viewed as independent creations, an effectual stop is put to our natural desire to investigate as far as possible the causes of expression." Again, he wanted to look into the depths of our nature, and he wanted to set aside the obstacles in the way. "He who admits on general grounds that the structure and habits of all animals have been gradually evolved, will look at the whole subject of expression in a new and interesting light."

In exploring emotions and how they are expressed, Charles gathered anecdotes; he corresponded with doctors in charge of lunatic asylums; he looked again inside himself, and he thought of Emma and the children. From his own experience, he wrote: "A strong desire to touch the beloved person is commonly felt; and love is expressed by this means more plainly than by any other. Hence we long to clasp in our arms those whom we tenderly love. We probably owe this desire to inherited habit, in association with the nursing and tending of our children, and with the mutual caresses of lovers." Something of the feeling that lay behind this was caught in a recollection by Francis. "I used to like to hear him admire the beauty of a flower; it was a kind of gratitude to the flower itself, and a personal love for its delicate form and colour. I seem to remember him gently touching a flower he delighted in."

On parental affection, Charles suggested that “an emotion may be very strong, but it will have little tendency to induce movement of any kind, if it has not commonly led to voluntary action for its relief or gratification.” Thinking perhaps of Emma with her reserve, he wrote: “No emotion is stronger than maternal love; but a mother may feel deepest love for her helpless infant, and yet not show it by any outward sign; or only by slight caressing movements, with a gentle smile and tender eyes.” William’s photograph of his mother watching Charles Waring in her lap again captures what his father had in mind.

Charles’s comments on infants and young children were remarkable for the focus of his interest and the detail of his recollections almost twenty years after his last child went away to school. His phrasing was now light, now heavy. He wrote about “the art of screaming” which infants “finely developed from the first days” because it was “of service” to them. Then, “When an infant is uncomfortable or unwell, little frowns . . . may be seen incessantly passing like shadows over its face; these being generally, but not always, followed sooner or later by a crying fit.” Later, “With very young children it is difficult to distinguish between fear and shyness; but this latter feeling with them has often seemed to me to partake of the character of the wildness of an untamed animal.” Charles had clear memories of his children in high spirits. “Under a transport of joy or of vivid pleasure, there is a strong tendency to various purposeless movements, and to the utterance of various sounds. We see this in our young children, in their loud laughter, clapping of hands, and jumping for joy.” He remembered a remark by Leonard. “I heard a child, a little under four years old, when asked what was meant by being in good spirits, answer, ‘It is laughing, talking, and kissing.’ It would be difficult to give a truer and more practical definition.”

Returning to his old interest in emotions and their expression, he took up the mystery of the links between the mind and the body, and

things we do not understand about our feelings. "The feelings which are called tender are difficult to analyse; they seem to be compounded of affection, joy, and especially of sympathy. These feelings are in themselves of a pleasurable nature, excepting when pity is too deep . . . They are remarkable under our present point of view from so readily exciting the secretion of tears." His eyes still moistened when he thought of Annie. Why?

Charles described how once on a railway journey he had watched "an old lady with a comfortable but absorbed expression" sitting opposite him in the carriage. As he was looking at her, he saw that her *depressores anguli oris*, the muscles that pulled down the corners of her mouth, "became very slightly, yet decidedly, contracted; but as her countenance remained as placid as ever, I reflected how meaningless was this contraction, and how easily one might be deceived. The thought had hardly occurred to me when I saw that her eyes suddenly became suffused with tears almost to overflowing, and her whole countenance fell. There could now be no doubt that some painful recollection, perhaps that of a long-lost child, was passing through her mind. As soon as her sensorium was thus affected, certain nerve-cells from long habit instantly transmitted an order to all the respiratory muscles, and to those round the mouth, to prepare for a fit of crying. But the order was countermanded by the will, or rather by a later acquired habit, and all the muscles were obedient, excepting in a slight degree the *depressores anguli oris*. The mouth was not even opened; the respiration was not hurried; and no muscle was affected except those which drew down the corners of the mouth . . . In this case, as well as in many others, the links are indeed wonderful which connect cause and effect in giving rise to various expressions on the human countenance; and they explain to us the meaning of certain movements, which we involuntarily and unconsciously perform, whenever certain transitory emotions pass through our minds." Charles watched the lady opposite him with



clinical attention to her *depressores anguli oris*, and guessing at once when he saw her eyes moisten that she was thinking of a long-lost child, as he did so often himself. This curiosity and compassion, the detached observation sharpened and deepened by his own feeling, was the essence of his approach to the science of man.

Some psychologists were now looking to find a new basis for their science in human evolution, just as Charles had hoped at the end of *The Origin of Species*. In 1876, George Croom Robertson, a young philosopher at University College London, started a periodical called *Mind: A Quarterly Review of Psychology and Philosophy*. The prospectus declared that psychology, “while drawing its fundamental data from subjective consciousness,” would be understood in the widest sense, as covering all related lines of objective inquiry including physiology of the nervous system, anthropology, comparative psychology and “mind as exhibited in animals generally.” Croom Robertson wrote to Charles about the plan; Charles was interested and offered his support.

In the third issue, Frederick Pollock, a young philosopher of law, wrote on evolution and ethics. “We are not content with saying that the [moral] faculty came from somewhere; we must seek to understand where it came from, and the nature of the process by which it was developed: and this is the knowledge of which Mr. Darwin has laid the foundations in his work on the *Descent of Man* . . . The theory of evolution furnishes us with a far more complete account than we had before of the whole genesis of the feelings which go to make up the Ethical Sanction, and leads to an explanation of one important set of the elements concerned, namely the sympathetic and social instincts, of which there was formerly no explanation at all.”

Charles read through the first five issues without registering any special interest. In the sixth, he found an article by Hippolyte Taine, the

French historian and critic who had proposed a method for the scientific study of human personality in his treatise *On Intelligence*. Taine described the stages by which an infant girl developed and learnt to speak. He drew an analogy between the child's successive states and the phases of primitive civilisation, referring to the idea that development of the individual "recapitulated" the evolution of the species. Charles thought at once of Willy and Annie in Macaw Cottage; he found his old white vellum notebook and looked again through his observations of their first years. His chief interest at the time had been in expression, but he now read through his notes and drew out details for a sketch of the development of "the several faculties." He sent it to Croom Robertson, aware that his personal feelings might have influenced his judgement of the paper's value. "I hope that you will read it in an extra critical spirit, as I cannot judge whether it is worth publishing from having been so much interested in watching the dawn of the several faculties in my own infant." Croom Robertson decided it was worth publishing and put it into the eighth issue as "A Biographical Sketch of an Infant."

Charles first described the reflex actions he had noted during Willy and Annie's first weeks. Sneezing, hiccuping, yawning, stretching "and, of course, sucking and screaming" were well performed during the first seven days. Charles commented on the immediate perfection of Willy's reflex movements and the extreme imperfection of his voluntary ones in the first few days. He described Emma's offering her breast to Willy in precise detail. "At the age of thirty two days he perceived his mother's bosom when three or four inches from it, as was shown by the protrusion of his lips and his eyes becoming fixed . . . he certainly had not touched the bosom. Whether he was guided through smell or the sensation of warmth or through association with the position in which he was held, I do not at all know."

Thirty-five years after Annie's first smile at eight weeks, Charles recalled it clearly and suggested that it was a "true smile, indicative of

pleasure,” because her “eyes brightened” and her eyelids were slightly closed. The smile arose when Annie looked at her mother, and was “therefore probably of mental origin.” On the power of reasoning, Charles felt that the facility with which Willy linked ideas was by far the most strongly marked of all the human infant’s distinctions from animals. “What a contrast does the mind of an infant present to that of the pike, described by Professor Mobius, who during three whole months dashed and stunned himself against a glass partition which separated him from some minnows.” But Charles was happy to give Annie second place to Jenny the orang. “Another of my infants, a little girl, when exactly a year old . . . seemed quite perplexed at the image of a person in a mirror approaching her from behind. The higher apes which I tried with a small looking glass behaved differently; they placed their hands behind the glass, and in doing so showed their sense, but far from taking pleasure in looking at themselves they got angry and would look no more.”

Charles had put the underlying question of the “Biographical Sketch” in *The Descent of Man*. “At what age does the new-born infant possess the power of abstraction, or become self-conscious, or reflect on its own existence?” We cannot answer for the infant, nor can we answer for different animals on the “ascending organic scale.” While Taine had suggested links between the development of a human infant and primitive societies, Charles in his sketch covered all human awareness. He set out “the probable steps and means by which the several mental and moral faculties of man have been gradually evolved.” This evolution of mankind must at least be possible, he argued, “for we daily see these faculties developing in every infant.” Reading his “natural history of babies” again, remembering how his first two infants had grown into small children by imperceptible steps, Charles was tracing the pattern every parent watches, wondering how it comes about. Watching Willy and Annie in their first years, he had seen the emergence of human nature—how our ancestors became what we are.