

## Foundations

Nothing could have been worse for the development of my mind than Dr. Butler's school [in Shrewsbury], as it was strictly classical, nothing else being taught except a little ancient geography and history. The school as a means of education to me was simply a blank.

*Autobiography, 27*

Looking back as well as I can at my character during my school life, the only qualities which at this period promised well for the future, were, that I had strong and diversified tastes, much zeal for whatever interested me, and a keen pleasure in understanding any complex subject or thing. I was taught Euclid by a private tutor, and I distinctly remember the intense satisfaction which the clear geometrical proofs gave me.

*Autobiography, 43*

Towards the close of my school life, my brother worked hard at chemistry and made a fair laboratory with proper apparatus in the

tool-house in the garden, and I was allowed to aid him as a servant in most of his experiments. He made all the gases and many compounds, and I read with care several books on chemistry, such as Henry and Parkes' *Chemical Catechism*. The subject interested me greatly, and we often used to go on working till rather late at night. This was the best part of my education at school, for it showed me practically the meaning of experimental science. The fact that we worked at chemistry somehow got known at school, and as it was an unprecedented fact, I was nick-named "Gas."

*Autobiography, 45–46*

The instruction at Edinburgh [University] was altogether by Lectures, and these were intolerably dull, with the exception of those on chemistry by [T. C.] Hope; but to my mind there are no advantages and many disadvantages in lectures compared with reading. Dr. Duncan's lectures on *Materia Medica* at 8 o'clock on a winter's morning are something fearful to remember.

*Autobiography, 46–47*

During my second year in Edinburgh I attended [Robert] Jameson's lectures on Geology and Zoology, but they were incredibly dull. The sole effect they produced on me was the

determination never as long as I lived to read a book on Geology or in any way to study the science.

*Autobiography, 52*

A negro lived in Edinburgh, who had travelled with [Charles] Waterton and gained his livelihood by stuffing birds, which he did excellently; he gave me lessons for payment, and I used often to sit with him, for he was a very pleasant and intelligent man.

*Autobiography, 51*

I also attended on two occasions the operating theatre in the hospital at Edinburgh, and saw two very bad operations, one on a child, but I rushed away before they were completed. Nor did I ever attend again, for hardly any inducement would have been strong enough to make me do so; this being long before the blessed days of chloroform. The two cases fairly haunted me for many a long year.

*Autobiography, 48*

During the three years which I spent at Cambridge [University] my time was wasted, as far as the academical studies were concerned, as completely as at Edinburgh and at school.

*Autobiography, 58*

From my passion for shooting and for hunting and when this failed, for riding across country, I got into a sporting set [at Cambridge University], including some dissipated low-minded young men. We used often to dine together in the evening, though these dinners often included men of a higher stamp, and we sometimes drank too much, with jolly singing and playing at cards afterwards. I know that I ought to feel ashamed of days and evenings thus spent, but as some of my friends were very pleasant and we were all in the highest spirits, I cannot help looking back to these times with much pleasure.

*Autobiography, 60*

No pursuit at Cambridge was followed with nearly so much eagerness or gave me so much pleasure as collecting beetles. It was the mere passion for collecting, for I did not dissect them and rarely compared their external characters with published descriptions, but got them named anyhow. I will give a proof of my zeal: one day, on tearing off some old bark, I saw two rare beetles and seized one in each hand; then I saw a third and new kind, which I could not bear to lose, so that I popped the one which I held in my right hand into my mouth. Alas it ejected some intensely acrid fluid, which burnt my tongue so that I was forced to

spit the beetle out, which was lost, as well as the third one.

*Autobiography, 62*

When at Cambridge I used to practise throwing up my gun to my shoulder before a looking-glass to see that I threw it up straight. Another and better plan was to get a friend to wave about a lighted candle, and then to fire at it with a cap on the nipple, and if the aim was accurate the little puff of air would blow out the candle. The explosion of the cap caused a sharp crack, and I was told that the Tutor of the College remarked, "What an extraordinary thing it is, Mr Darwin seems to spend hours in cracking a horse-whip in his room, for I often hear the crack when I pass under his windows."

*Autobiography, 44–45*

I acquired a strong taste for music, and used very often to time my walks so as to hear on weekdays the anthem in King's College Chapel [Cambridge]. This gave me intense pleasure, so that my backbone would sometimes shiver. . . . I am so utterly destitute of an ear, that I cannot perceive a discord, or keep time and hum a tune correctly; and it is a mystery how I could possibly have derived pleasure from music. My musical friends soon

perceived my state, and sometimes amused themselves by making me pass an examination, which consisted in ascertaining how many tunes I could recognise, when they were played rather more quickly or slowly than usual. “God save the King” when thus played was a sore puzzle.

*Autobiography, 61–62*

In order to pass the B.A. examination, it was, also, necessary to get up Paley’s *Evidences of Christianity*, and his *Moral Philosophy*. This was done in a thorough manner, and I am convinced that I could have written out the whole of the *Evidences* with perfect correctness, but not of course in the clear language of Paley. The logic of this book and as I may add of his *Natural Theology* gave me as much delight as did Euclid. The careful study of these works, without attempting to learn any part by rote, was the only part of the academical course which, as I then felt and as I still believe, was of the least use to me in the education of my mind. I did not at that time trouble myself about Paley’s premises; and taking these on trust I was charmed and convinced by the long line of argumentation.

*Autobiography, 59*

Whilst examining an old gravel-pit near Shrewsbury a labourer told me that he had found in it a large worn tropical *Volute* shell, such as may be seen on the chimney-pieces of cottages; and as he would not sell the shell I was convinced that he had really found it in the pit. I told [Professor Adam] Sedgwick of the fact, and he at once said (no doubt truly) that it must have been thrown away by someone into the pit; but then added, if really embedded there it would be the greatest misfortune to geology, as it would overthrow all that we know about the superficial deposits of the midland counties. These gravel-beds belonged in fact to the glacial period, and in after years I found in them broken arctic shells. But I was then utterly astonished at Sedgwick not being delighted at so wonderful a fact as a tropical shell being found near the surface in the middle of England. Nothing before had ever made me thoroughly realize though I had read various scientific books that science consists in grouping facts so that general laws or conclusions may be drawn from them.

*Autobiography, 69–70*

Before long I became well acquainted with [Professor John Stevens] Henslow, and during

the latter half of my time at Cambridge took long walks with him on most days; so that I was called by some of the dons “the man who walks with Henslow”.

*Autobiography, 64*

During my last year at Cambridge I read with care and profound interest [Alexander von] Humboldt’s *Personal Narrative*. This work and Sir J. Herschel’s *Introduction to the Study of Natural Philosophy* stirred up in me a burning zeal to add even the most humble contribution to the noble structure of Natural Science. No one or a dozen other books influenced me nearly so much as these two.

*Autobiography, 67–68*

Considering how fiercely I have been attacked by the orthodox it seems ludicrous that I once intended to be a clergyman. Nor was this intention and my father’s wish ever formally given up, but died a natural death when on leaving Cambridge I joined the *Beagle* as Naturalist.

*Autobiography, 57*