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978-1-107-05214-7 - The Correspondence of Charles Darwin: Volume 21 1873

Editors Frederick Burkhardt, James A. Secord, Janet Browne, Samantha Evans, Shelley Innes,
Francis Neary, Alison M. Pearn, Anne Secord and Paul White

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THE CORRESPONDENCE OF
CHARLES DARWIN

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VOLUME 21 1873



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In Memoriam
ANNE SCHLABACH BURKHARDT
1916–2012

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CALENDAR LIST OF LETTERS

The following list is in the order of the entries in the *Calendar of the correspondence of Charles Darwin*. It includes all those letters that are listed in the *Calendar* for the year 1873, and those that have been redated into 1873. Alongside the *Calendar* numbers are the corrected dates of each letter. A date or comment printed in italic type indicates that the letter has been omitted from this volume.

Letters acquired after the publication of the first edition of the *Calendar*, in 1985, have been given numbers corresponding to the chronological ordering of the original *Calendar* listing with the addition of an alphabetical marker. Many of these letters are summarised in a ‘Supplement’ to a new edition of the *Calendar* (Cambridge University Press, 1994). The markers ‘f’, ‘g’, and ‘h’ denote letters acquired after the second edition of the *Calendar* went to press in 1994.

- | | |
|--|---|
| 7422. [before 11 Mar 1873] | 8713f. [1873] |
| 7429a. 6 Jan [1873 or 1874] | 8714. <i>Cancelled: enclosure to 9290.</i> |
| 7742. 6 May [1873] | 8714f. [1–15 Mar 1873] |
| 8139f. 2 Jan [1873 or 1874] | 8715. [9 Nov 1873 or 26 April or 6 December 1874] |
| 8185. 27 Jan [1873] | 8715f. [<i>after 1866?</i>] <i>To be published in a later supplement.</i> |
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| 8283. <i>8 Apr [1874]</i> | 8718. [before 18] Jan 1873 |
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| 8304. 30 Apr [1873] | 8720. 3 Jan 1873 |
| 8524. 18 Sept [1873] | 8721. 3 Jan 1873 |
| 8552f. [9 Apr 1873] | 8722. <i>3 Jan [1874]</i> |
| 8699. [after 7 Apr 1873 ²] | 8723. 3 Jan 1873 |
| 8700. [c. 29 Nov 1873] | 8724. 4 Jan [1873] |
| 8700f. <i>Cancelled: same as 8659f.</i> | 8725. 4 Jan 1873 |
| 8701. [1873 ²] | 8726. 5 Jan [1873] |
| 8702. [1 Oct 1873] | 8727. 7 Jan 1873 |
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| 8704. [<i>after 1869</i>]. <i>To be published in a later supplement.</i> | 8728f. 9 Jan 1873 |
| 8705. [after 5 May 1873] | 8729. 9 Jan 1873 |
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INTRODUCTION

Having laboured for nearly five years on human evolution, sexual selection, and the expression of emotions, Darwin was able to devote 1873 almost exclusively to his beloved plants. He resumed work on the digestive powers of sundews and Venus fly traps, and the comparative fertility and vigour of self- and cross-pollinated species, work that would culminate in two books, *Insectivorous plants* (1875) and *Cross and self fertilisation* (1876). Darwin's son Francis became increasingly involved in this botanical research, eventually renouncing plans for a medical career to become his father's scientific secretary. Darwin had always relied on assistance from within the family, and he was clearly delighted by Francis's decision. A large portion of the letters Darwin received in 1873 were in response to *The expression of the emotions in man and animals*, published the previous year. As was typical, readers wrote to Darwin personally to offer suggestions, observations, and occasional criticisms, some of which were incorporated in a later edition. Darwin also contributed to discussions in the scientific weekly *Nature* on the role of inherited and acquired characteristics in animals. The subject was brought closer to home by Francis Galton's work on inherited talent, which prompted Darwin to reflect on the traits and conditions that had led to his achievement in science. The importance Darwin attached to friendship and patronage in science were manifest in his leading roles in creating a private memorial fund for Thomas Henry Huxley, and in efforts to alleviate the financial troubles of Anton Dohrn's Zoological Station at Naples.

Darwin had resumed experiments on the common sundew, *Drosera rotundifolia*, in August 1872, but was interrupted by revisions to *Origin* and corrections to the proofs of *Expression*. Taking up his research again in January, he wrote to Joseph Dalton Hooker, 'It is wonderful how many points I omitted to observe, which I ought to have observed' (letter to J. D. Hooker, 12 January [1873]). *Drosera* was the main focus of Darwin's study of insectivorous plants, a group that also included the Venus fly trap (*Dionaea muscipula*). The experiments involved not only feeding meat, egg, and gelatine to the plants, but also applying various acids and alkaloids, and even electrical stimulation. On sending Darwin a specimen of the carnivorous *Drosophyllum lusitanicum*, Hooker wrote: 'Pray work your wicked will on it—root leaf & branch!' (letter from J. D. Hooker, 12 January 1873). Darwin found that the glandular hairs on the leaves of *Drosera* were sensitive to slight pressure and minute quantities of fluid. Material applied to the centre caused the outermost tentacles to bend inward, so that the plant closed like a fist. Darwin was fascinated by this transmission of 'motor impulse', which seemed analogous to muscular contraction in animals: 'a nerve is

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touched . . . a sensation is felt' (*Insectivorous plants*, p. 63). The plants secreted a viscid fluid, which Darwin suspected attracted insects by its odour, like 'a baited trap' (*ibid.*, p. 17). Through a series of painstaking experiments, Darwin determined that the secretions increased and became more acidic after inflection, like the gastric juices in the stomach, so that the plant could be said 'to feed like an animal' (*ibid.*, p.18).

The research on insectivorous plants involved collaboration with a wide range of experts, including the American botanist Mary Treat, who performed experiments suggested by Darwin on the North American species *Drosera filiformis*. Hooker, with the assistance of William Turner Thiselton-Dyer, was engaged in a taxonomic study of the pitcher plant, *Nepenthes*. He began to perform experiments modelled on those of Darwin, feeding the plant egg and raw meat, and discovering digestive properties analogous to those in *Drosera*. Darwin's experiments on plant movement and digestion led him to seek help from a different quarter, experimental physiology. His son Francis was assisting the histologist Edward Emanuel Klein at the Brown Animal Sanatory Institution, a centre of medical research in London. On the advice of Klein, Francis obtained a new microscope for his father from a German firm, and sent a copy of the *Handbook for the physiological laboratory* (1873), a detailed guide to animal experimentation that Klein had co-authored. Darwin contacted two of the *Handbook's* other contributors, Thomas Lauder Brunton, a specialist in pharmacology, and John Scott Burdon Sanderson, a professor at University College, London, and director of the Brown Institution. Darwin sent an abstract of his preliminary results on *Drosera* to Burdon Sanderson, who had performed analogous experiments on the muscle and nerve tissue of animals. Burdon Sanderson visited Darwin at Down in July and was drawn into the research, recommending various chemical compounds such as curare and colchicine that had known effects on animals. To test whether the plants had a nerve-like structure, Darwin suggested electrical experiments on *Dionaea*, and had specimens delivered to the Brown Institution. Burdon Sanderson used a galvanometer (a device for detecting and measuring electric current) to record the response of a leaf when stimulated with an induction coil. He was so impressed by the results that he sent Darwin the news by telegraph in September, and presented his findings at the British Association for the Advancement of Science later that month. Finally, Darwin enlisted the chemist Edward Frankland to help analyse the composition of the digestive fluid of *Drosera*. Darwin washed countless leaves of the plant in distilled water, sending the solution to Frankland for analysis. Following Frankland's advice, he performed his own tests and eventually determined that *Drosera* secreted digestive acid in conjunction with a 'ferment' to break down organic matter. The ferment would later be known as a digestive enzyme.

Darwin's other main focus of botanical investigation in 1873 was cross- and self-fertilisation, work that had been going on for many years. Darwin resumed these studies in February. He received detailed observations from Fritz Müller in Brazil, Friedrich Hildebrand in Germany, and Federico Delpino in Italy that suggested that some species crossed readily in certain climates but not in others. He encouraged

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research by Thomas Henry Farrer on a complex floral structure in crown vetch (*Coronilla*) that allowed insects to access nectar from the cells of the calyx, rather than from within the staminal tube. ‘You are the man to conquer *Coronilla*’, he wrote to Farrer, ‘One may feel sure that primordially nectar was secreted within the flower & then excreted by the calyx, as in some species of Iris & Orchids . . . & as this change was going on . . . all the parts of the flower would become modified & correlated’ (letter to T. H. Farrer, 14 August 1873). Darwin worried, however, that his own manuscript was only half written. Seeing an advance notice for the book, Julius Victor Carus wrote in May to request permission to translate it into German. Darwin was vexed, and begged his publisher not to advertise it again, ‘for Heaven knows when it will be ready’ (letter to John Murray, 4 May [1873]).

As Darwin worked exclusively on botany, he drew more on assistance from his son Francis. While visiting his fiancée, Amy Ruck, in Wales, Francis observed bees gnawing through the base of the keel to remove nectar from *Lathyrus sylvestris*. He also fed bread to *Drosera* and staked out a portion of garden to watch worms: ‘no family should be without his worm- garden— we have grt fun with ours— we take notes and take tracings of their burrows’ (letter from Francis Darwin, 14 August [1873]). In September, Darwin considered employing Francis as his scientific secretary and wrote to his brother for advice: ‘He earnestly desires to aid me and . . . would much like the work.’ Darwin weighed the practicality of a scientific career over one in medicine: ‘it certainly looks as if science was rising in importance; and if so more places will be created’ (letter to E. A. Darwin, 20 September 1873). Erasmus, who had studied medicine but never practiced, owing to poor health, supported the decision on the basis of the family’s collective infirmity: ‘After all he is a Darwin and the chances are against any of our unfortunate family being fit for continuous work’ (letter from E. A. Darwin, 25 September [1873]). Shortly afterwards, it was arranged for Francis to rent a house in the village (Down Lodge), and Emma rejoiced that they could now go to work on pruning its overgrown shrubs and removing the half-dead trees on the property.

While Darwin pressed on with his botanical work, responses to his most recent book began to pour in. *Expression* had been published at the end of November 1872 and sold quickly. He wrote to Hooker on 12 January [1873], ‘Did I ever boast to you on the success, as judged by the lowest standard of sale, of my Expression Book— 9000 copies have now been printed off, & most of them sold!’ Reviews remarked on the popular nature of the book. Full of observations of infants and anecdotes of zoo animals and family pets, it was judged more attractive and entertaining than his previous works on evolution. One highly critical article appeared anonymously in the *Edinburgh Review* in April ([Baynes] 1873). Darwin asked one of his Scottish correspondents, George Cupples, who the author might be, adding: ‘I hope that this explosion of wrath & contempt has done the poor gentleman, whoever he may be, some good, but I felt it rather hard after wading through so much abuse not to find myself one whit the wiser on any point; for I knew my own ignorance before hand’ (letter to George Cupples, 28 April [1873]).

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Along with the reviews of *Expression*, Darwin picked through an abundance of letters containing comments and fresh observations from readers, some of which were incorporated after his death in a second edition. A provincial doctor and asylum superintendent, Stanley Haynes, reported on the infectiousness of coughing during sermons, and students who moved their ears and scalp during lectures, indicating attention. A friend of CD's daughter Henrietta recollected the expression of an Italian boatman whom she had goaded with remarks about the war with France and the exiled emperor, only to have him turn fierce, draw back the corners of his mouth and clash his teeth together: 'he would fly at the Empr's throat like a bulldog' (letter from L. M. Forster to H. E. Litchfield, 20 February 1873). The surgeon Francis Stephen Bennet Francois de Chaumont, whose daughter's habit of shoulder shrugging and finger rubbing had been mentioned in *Expression*, pp. 265–6, informed Darwin that his newest daughter continued the family tradition. 'I hope your little daughter may flourish in all ways,' Darwin replied, '& shrug her shoulders & twiddle her fingers in the orthodox fashion, & thus confer a benefit on humanity, by showing the force & truth of the great principle of inheritance!' (letter to F. S. B. F. de Chaumont, 3 February [1873]).

Some readers proposed alternative origins for expressions: might kissing have arisen from our ancestors sucking the blood from bones, or laughter from the heavy breathing that accompanied sexual intercourse? (letter from ?, [1873?]). The Scottish physician William Main suggested that facial movements could be reduced to ascending or descending lines, impelled by the upward direction of life and the downward direction of death and dying: 'our ancestors would no doubt come by experience to associate energy & progress with up lines; & sadness & decay with the reverse—' (letter from William Main, 2 April 1873). The zoologist Henry Reeks suspected the habit of scratching one's head when puzzled to be a vestige of the evidently pleasurable rubbing and scraping that animals performed all over their bodies, which had receded with the advance of civilisation and good breeding (letter from Henry Reeks, 3 March 1873). Robert Swinhoe wrote from Ning-Po in China about the local practice of inducing tears by tickling the eyes with a bone instrument; the resulting flow was considered refreshing. He became a 'martyr in the cause of enquiry' by allowing a Chinese barber to do the tickling, with the result that a passage in the corner of one eye was opened, so that air rushed in when he blew his nose: 'I was very glad when it was over, and have never felt an inclination to have a second dose' (letter from Robert Swinhoe, 26 March 1873).

One of the leading contributors to *Expression*, the psychiatrist James Crichton-Browne, wrote to Darwin about recent experiments on cerebral localisation in animals that promised to link brain convolutions and specific muscular actions: 'the ears are erected on irritating a parietal convolution—the tail is wagged—while stimulation of an orbital one produces snapping of the jaws' (letter from James Crichton-Browne, 16 April 1873). Crichton-Browne was trying to establish a centre for research on diseases of the brain at the West Riding Lunatic Asylum, where he was director. He invited Darwin to contribute to investigations on the phenomena of general

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paralysis, in conjunction with leading physiologists such as David Ferrier and John Hughlings Jackson. Darwin declined to write an essay on the topic, but agreed to comment on photographs that illustrated the physiognomy of the disease (letter to James Crichton-Browne, 30 December 1873).

In February, Darwin received a letter from John Traherne Moggridge on the nature of animal instinct. Moggridge, who had worked on the natural history of spiders, took issue with a definition recently advanced by Alfred Russel Wallace, that instinct was the performance of complex acts ‘absolutely without instruction or previously acquired knowledge’ (A. R. Wallace 1870, p. 204). Moggridge suggested instead that ‘inherited experience’ was often a guide, for knowledge acquired by an individual could be transmitted to its offspring (letter from J. T. Moggridge, 1 February 1873). Darwin soon became involved in a related discussion in *Nature* magazine, forwarding a letter from William Huggins on a case of inherited instinct in three generations of dogs, originating with an English mastiff named Kepler who was fearful of butchers and butcher’s shops (letter to *Nature*, [before 13 February 1873]). Huggins’s letter prompted replies from Wallace and others, who suggested that the behaviour arose from some association (perhaps an injury), triggered by smell. Darwin joined the debate, writing to *Nature* (letter to *Nature*, [before 13 March 1873]) about a horse who had pulled a mail coach along the same route for many years and who, after going blind, continued to make regular stops at public houses without the driver’s commands. The debate later shifted to ants when Darwin forwarded a letter from the mining engineer James Duncan Hague, who had observed a column of the insects disperse wildly after he had smashed some with his finger (letter to *Nature*, [before 3 April 1873]). Moggridge suggested the experiment of wiping one’s finger across the ants’ path without harming them, to determine whether the behaviour was caused by a disturbing smell. ‘The case appears curious’, wrote Darwin, ‘as I believe no one has ever observed an invertebrate animal realising danger by seeing the corpses of a fellow species’ (letter to *Nature*, [before 24 July 1873]).

Darwin had occasion to reflect more personally on the power of instinct and inheritance when he was asked by his cousin Francis Galton to participate in a study of English men of science. Galton’s most recent article had called for a national register of talent in order to encourage interbreeding among the ‘naturally gifted’ (Galton 1873a). Darwin was sympathetic to his cousin’s aims but regarded the project as ‘utopian’ (letter to Francis Galton, 4 January [1873]). Continuing the line of research he had begun with *Hereditary genius* (1869), Galton tried to establish the transmission of various character traits in families, and the comparative role of nature and nurture by gathering statistics through a questionnaire. Darwin answered his cousin’s queries, though he tended to downplay the importance of innate ability. His ‘special talents’, he wrote, were ‘none, except for business . . . being regular in correspondence, and investing money very well’ (letter to Francis Galton, 28 May 1873). Among character traits, he listed ‘Steadiness; great curiosity about facts, and their meaning; some love of the new and marvellous’. He also noted his passion for collecting, the value of Euclid and William Paley as educational influences, and the uselessness of his

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Edinburgh and Cambridge courses: ‘every thing else bosh’. His scientific education, he concluded, began on the *Beagle* voyage. Suspecting that no one was a good judge of his own character, he asked his sons to complete the list. Francis added to his father’s virtues: ‘sober, honest & industrious’ (letter to Francis Galton, 28 May 1873).

For a number of years, Darwin had corresponded with the German zoologist Anton Dohrn, and had supported his efforts to establish a Zoological Station at Naples for students and naturalists to study living organisms in natural habitats. Dohrn had been pursuing financial support from the German state and scientific institutions, and negotiating with local authorities in Italy. On 27 January, he wrote to Darwin: ‘My life here is a constant fight with intrigues and difficulties’. Later in the year, Darwin learned from Francis Maitland Balfour that Dohrn had run into serious difficulties with one of his contractors, so that the future of the station was now in jeopardy. Balfour suggested that Darwin mount a campaign for contributions from British naturalists, forestalling Dohrn’s efforts to borrow a large sum in his own name. Together with Thomas Henry Huxley, Darwin drafted an appeal to prospective donors, only to have the scheme quashed by Dohrn himself, who thought it would offend his father (enclosure to letter from T. H. Huxley, 3 December 1873).

In April, Darwin also took the lead in a more personal relief fund. Thomas Huxley, who had often struggled financially and taken on extra work to support a large extended family, fell on very hard times because of a protracted legal dispute with a neighbour over renovations to his new house, and mounting debts owed to the builder. The idea of a subscription fund was first suggested in early April by Katharine Murray Lyell in conversation with Emma Darwin, and Darwin began to sound out Huxley’s friends on the matter. The main difficulty was how to raise the money and present it so as not to cause offence or embarrassment. As Ellen Frances Lubbock advised, ‘I *do* think . . . it ought to be quietly placed before our friend that not only for his own sake, or for that of his family, but for the sake of Science, he should be above the pride which might lead him to reject what we should feel it a privilege to offer’ (letter from E. F. Lubbock, [before 7 April 1873]). Hooker added: ‘I have beaten my brains to find out if we could practise a pious fraud, & hand it over to him as a legacy from a defunct friend— but he is a deal too sharp’ (letter from J. D. Hooker, [7 April 1873]). A group of Huxley’s close friends, including Hooker, John Lubbock, Herbert Spencer, John Tyndall, George Busk, and William Spottiswoode met with Darwin in London to discuss the affair. The friends decided to keep the memorial a secret, with the money paid directly into Huxley’s bank account. Eighteen subscribers contributed a total of £2150 (see Appendix V), and Darwin was charged with the delicate matter of breaking the news to Huxley. ‘If you could have heard what was said, or could have read . . . our inmost thoughts, you would know that we all feel towards you, as we should to an honoured & much loved brother. I am sure that you will return this feeling, & will therefore be glad to give us the opportunity of aiding you in some degree, as this will be a happiness to us to the last day of our lives’ (letter to T. H. Huxley, 23 April 1873). Huxley was overwhelmed: ‘I have spent many sleepless hours in wondering what I have done to make my friends care

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so tenderly & thoughtfully for my welfare. . . . I have for months been without energy & without hope' (letter from T. H. Huxley, 24 April 1873). He accepted the gift and wrote, 'I pledge myself to make the best I can of this cranky frame and get it in order for the best and highest kind of work of which I am capable'. His friends continued to worry, however, that he would overwork himself, and so Hooker volunteered to accompany him on a restorative holiday to France and Germany in the summer.

In Darwin's case, it was his 'despotic wife' who forced him to take periodic breaks from work (letter to J. D. Hooker, 21 February [1873]). They rented a house in Montague Street in London in March, visited the Wedgwoods at Leith Hill Place in June, stayed with the Farrers in Surrey and with their son William in Southampton in August, and spent ten days with Henrietta and her husband in London in November. In the midst of one of these longish breaks, Darwin wrote to his son Francis, 'I am in an idiotic state of idleness & long to awake again into life' (letter to Francis Darwin, 18 [August 1873]). Darwin experienced a return of the acute stomach troubles that had plagued him intermittently for many years, and began consulting a new physician, Andrew Clark, in August. Renowned for treatments based on strict dietary regimen, Clark attributed Darwin's troubles to the retention of acid waste; this, Clarke said, 'now & then rises into a big wave . . . worries the nervous system and then breaks into a shower of uric acid which falls through the kidneys & escapes by the urine'. 'There will be no getting to paradise,' he concluded, 'without the passage of purgatory' (letter from Andrew Clark, 3 September 1873).

In November, Darwin was notified by his publisher that the stock of *Descent of man* was nearly exhausted, and that a new edition was called for. There were commercial advantages for Murray in bringing out a substantially revised book, and Darwin was rarely content to reissue a previous publication without answering criticisms and adding new material. In *Descent*, Darwin had argued that language originated from animal sounds, and he had recently been criticised for this by the philologist Friedrich Max Müller in a series of lectures at the Royal Institution of Great Britain. Max Müller maintained that animal cries and gestures bore little resemblance to human speech, and went so far as to assert that animals, in lacking the power of language, also lacked the ability to form general ideas or concepts. On receiving a copy of the lectures, Darwin was deferential to Max Müller's expertise, but in the second edition of *Descent* he expanded his discussion to address his criticisms. 'As far as language is concerned I am not worthy to be your adversary', Darwin conceded, '[but] he who is fully convinced, as I am, that man is descended from some lower animal, is almost forced to believe a priori that articulate language has been developed from inarticulate cries; and he is therefore hardly a fair judge of the arguments opposed to this belief' (letter to Friedrich Max Müller, 3 July 1873).

Darwin began work on the new edition of *Descent* on 20 November, and soon complained to Hooker, '[it] turns out a truly awful job, from the innumerable criticisms, letters, & new facts which I have to compare & judge of' (letter to J. D. Hooker, 20 December [1873]). Keen to minimise the interruption to his botanical work, he considered employing someone else for the more routine tasks of editing the manuscript.

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His first choice was Alfred Russel Wallace, since he knew that Wallace sometimes took on such work for pay. Darwin assured his fellow naturalist that the job was ‘dull & tedious’, and that he did not want criticisms at this stage: ‘I grieve to know how much we differ on many points; & in my opinion each man must publish the conclusions at which he has arrived & in which he still believes whether or not they are sound’ (letter to A. R. Wallace, 17 November 1873). But no sooner had Wallace accepted, than Darwin reconsidered in favour of his son George. Keeping such editorial work in the family followed the pattern that Darwin had used for previous publications, his main assistant in the past having been Henrietta.

The job also suited George’s current situation, for he had been forced to give up his plans to become a barrister owing to poor health. Suffering from chronic stomach problems that bore some resemblance to his father’s, George tried a variety of treatments during the year, including Revalenta (lentil and barley meal obtained from a health-food shop in London), a tonic of Oxley’s Essence of Ginger and Tincture of Cayenne, mixed with brandy (on the advice of his father), and a strict diet recommended by Andrew Clark. ‘When I have an attack’, George complained, ‘I’m to starve sweat & purge it away’ (letter from G. H. Darwin, [1 October 1873]). He also considered the water cure, with Darwin offering to move the family to Malvern if it would make George more comfortable. Mindful of the inheritance of diseases and frail constitutions, Darwin felt both sympathy and responsibility for his children’s health. He wrote to George and Horace (who was also often sickly), ‘you both my dear Sons suffer from almost the greatest evil which can afflict anyone . . . but even if your healths should keep bad, it is possible to have some little happiness & enjoyment in life’ (letter to G. H. Darwin, 5 March [1873]). Darwin worried too that George, perhaps owing to physical infirmity, was wasting his talents by writing short articles on diverse subjects. He praised an essay in the *Contemporary Review* on the value of restrictions on marriage for criminals, the insane, and those with congenital deficiencies or diseases: ‘It is a good omen for the future’ (letter to G. H. Darwin, 2 August [1873]). But he was more reserved about an essay on religion, advising George to reconsider publication: ‘It is an old doctrine of mine that it is of paramount importance for a young author to publish (if with his name) only what is very good & new; so that the public may have faith in him, & read what he writes. . . . An enemy might ask who is this man, & what is his age & what have been his special studies, that he shd. give to the world his opinions on the deepest subjects?’ (letter to G. H. Darwin, 21 October [1873]). Darwin also warned George of the evils of ‘giving pain to others, & injuring your own power & usefulness’, citing the examples of John Stuart Mill and Charles Lyell, who would have had far less influence if they had been outspoken on religion or the Bible.

Darwin followed his own advice on religious matters, even in letters. When two Dutch students asked about the implications of his theory for belief in God, Darwin replied with his usual modesty and reticence: ‘I am aware that if we admit a first cause, the mind still craves to know whence it came and how it arose. Nor can I overlook the difficulty from the immense amount of suffering through the world. I

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am, also, induced to defer to a certain extent to the judgment of the many able men who have fully believed in God; but here again I see how poor an argument this is. The safest conclusion seems to be that the whole subject is beyond the scope of man's intellect; but man can do his duty' (letter to N. D. Doedes, 2 April 1873). Darwin's correspondence continued to attest to the wide range of religious readings of his theory. He received a book of German poems expressing 'the high and pious idea of a Creator' silently working through all religions and science (letter from Ernst Meitzen, 17 January 1873). A poor-law officer, John Farr, wrote: 'Faith like Species, is constantly presenting us which new phazes, and is no more permanent than species are permanent' (letter from John Farr, 7 July 1873). Further thoughts on the evolution of religion came from the American Unitarian Moncure Daniel Conway, who was compiling an anthology of sacred writings: 'I have at every step seemed to be hearing the echoes of your great generalizations. . . . The ethnical religions correspond with genera and species at every point, and they have perished and survived in exact accordance with natural selection' (letter from M. D. Conway, 10 September [1873]).

In the village of Down, Darwin and his family continued to support the church as a social institution. They ran into difficulties, however, with the vicar, George Sketchley Ffinden, who had been appointed in 1871. Darwin had usually been on good terms with the local clergymen, and had even taken on substantial responsibilities in the administration of church finances before Ffinden's arrival, when the parish suffered from two corrupt and absentee curates. Ffinden however seemed to regard the Darwins' involvement in village affairs as a trespass on his own authority, as was evident in a clash over the use of the local schoolroom. In November, Ffinden refused to support its continued use as a reading room for working men in the evenings during the winter months. Darwin wrote twice to the Down School Board, noting the value of providing working men with a place of recreation other than the public house, and stipulating that only 'respectable' newspapers and books would be provided, and only tea and coffee served (letters to Down School Board, [after 29 November 1873] and 19 December 1873). Ffinden replied tersely to Emma Darwin, stating that he objected to Darwin's request (which had been granted) 'most strongly on public grounds' (letter from G. S. Ffinden to Emma Darwin, 24 December 1873). Later correspondence hinted that Ffinden found Darwin's scientific celebrity, in combination with his religious unorthodoxy, troubling and potentially undermining (J. R. Moore 1985, pp. 471–2).

Fame for Darwin came in a variety of forms. In June, he was invited by a Royal Navy officer to join an expedition to the western coast of the Americas. A private cabin and place at the table with the commander in chief of the Pacific Station were held out as enticements. Darwin was of course not about to embark on a lengthy ocean voyage as he once had as a young man: 'The glorious enjoyment of new scenes for observation is for ever over for me,' he replied, '& I must rest contented with past memories' (letter to A. A. L. P. Cochrane, [after 7 June 1873]). Darwin did accept an offer closer to home, when he was graced by an invitation from John Jenner Weir to act as a patron of the annual cat show at the Crystal Palace: 'You are quite at liberty

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to honour me by putting my name down as one of the Patrons . . . but let me advise you not to do so, as people may refuse to go & admire a lot of atheistical cats!’ (letter to J. J. Weir, 18 September [1873]). A more philosophical admiration came from Karl Marx, who regarded *Origin of species* as providing the natural historical basis for class struggle, and sent Darwin a copy of *Das Kapital* (vol. 1, 2d edition). Darwin wished he was more worthy to receive it, ‘by understanding more of the deep & important subject of political economy’. He added, ‘Though our studies have been so different, I believe that we both earnestly desire the extension of knowledge, & that this in the long run is sure to add to the happiness of mankind’ (letter to Karl Marx, 1 October 1873). New translations of *Origin* and other works continued to bring Darwin’s theory to broader European audiences. Requests were received for Hungarian and Polish editions of *Origin*. A Dutch translation of *Expression* (Hartogh Heijns van Zouteveen trans. 1873) reached two students at the University of Utrecht, who wrote praising the book, and urged Darwin to bring out a cheaper edition of *Origin*: ‘Your name is for many of us a watchword in the battle of science. *You* are for us in several regards a personification of Natural Filosofy’ (letter from J. C. Costerus and N. D. Doedes, 18 March 1873). Darwin replied, enclosing two photographs, and shortly received another portrait in turn, showing the two young men gazing at his written message, a touching tribute to the value of his personal correspondence: ‘The letter, you see eternalized before us, is *your* letter’ (letter from N. D. Doedes, 27 March 1873).

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