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THE CORRESPONDENCE OF  
CHARLES DARWIN

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Charles Darwin, Edited by Frederick Burkhardt, James A. Secord, The Editors of the Darwin

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without whose support this edition  
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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 1880, and those that have been redated into 1880. 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’, ‘h’, and ‘j’ denote letters acquired after the second edition of the *Calendar* went to press in 1994.

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‘My heart & soul care for worms & nothing else in this world,’ Darwin wrote to his old Shrewsbury friend Henry Johnson on 14 November 1880. Darwin became fully devoted to earthworms in the spring of the year, just after finishing the manuscript of *Movement in plants*, his most ambitious botanical book. Both projects explored the complexities of movement, forms of sensitivity, and the ability of organisms to adapt to varying conditions. The implications of Darwin’s work for the boundary between animals and plants, especially the origins of the nervous system, were picked up by some of his readers who had trained in zoology. New studies of animal instincts by George John Romanes drew upon Darwin’s early observations of infants, family pets, and zoo animals begun in the late 1830s. Other correspondents raised questions touching on the distinction between human races, the foundations of the moral sense, and the harmony of evolution and creation. Many letters flowed between Darwin and his children, as he took delight in their accomplishments, and they continued to assist him in his experiments and observations. Financial support for science was a recurring issue, as Darwin tried to secure a Civil List pension for Alfred Russel Wallace, and continued his aid for James Torbitt and the quest for a blight-resistant potato. The year opened and closed with an irksome controversy with Samuel Butler, prompted by the publication of *Erasmus Darwin* the previous year.

Darwin’s most recent book, *Erasmus Darwin*, had been published in November 1879. It was received well by his relations, many of whom had provided manuscripts and memories of his grandfather passed down over several generations. He continued to receive letters about Erasmus’s life and other bits of family history. On 1 January, a distant cousin, Charles Harrison Tindal, sent a cache of letters from two of Darwin’s grandfather’s clerical friends, full of lively discussions on the philosophy of Berkeley and Rousseau, the politics of the East India Company, and elements of pig anatomy. ‘The extract about the eagerness of the two learned divines to see a pig’s body opened is very amusing’, Darwin replied, ‘& that about my grandfather’s character is of much value to me’ (letter to C. H. Tindal, 5 January 1880). Darwin had employed a genealogist, Joseph Lemuel Chester, to investigate a little-known uncle of Erasmus with extensive landholdings in Lincolnshire. Chester found much pleasure and inspiration burrowing away in archives and registry offices, and produced a twenty-page history of the Darwin family reaching back to the seventeenth century: ‘Sometimes a single fact in the life of one person has been the turning point of events that have influenced the whole Kingdom, & even the

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world' (letter from J. L. Chester, 3 March 1880). Darwin's sons George and Leonard also continued to research the family, and George was obliged to meet some of the distant relations and conciliate a few whose ancestors had not featured in Darwin's Life. 'In an endeavour to explain away y<sup>r</sup>. treatment of [William Alvey Darwin],' George wrote on 28 May 1880, 'I ... said you were anxious not to overburden the book with family details. ... I seem to have got rather in to the thick of all these cousins & think I must pay a round of visits.' One cousin, Reginald Darwin, warmed to George: 'he had been alarmed at a Wrangler, and expected a tall thin man in spectacles, and was delighted to find an ordinary mortal who could laugh' (letter from W. E. Darwin to Charles and Emma Darwin, 22 July 1880).

Sales of *Erasmus Darwin* were moderate and reviews generally positive, but the reception of the book was soon coloured by controversy. The work had been co-authored with Ernst Krause, whose essay on Erasmus's scientific work complemented Darwin's biographical piece. Krause's essay was based on an article he had written for the German journal *Kosmos* in February 1879, an issue produced in honour of Darwin's birthday. Krause enlarged and revised the essay for the book, partly in order to address a publication by Samuel Butler, *Evolution old and new*, which had appeared in May 1879. Krause wanted to correct Butler's 'immeasurably superficial and inaccurate piece of work', although Darwin advised him not to 'expend much powder & shot' (*Correspondence* vol. 27, letter from Ernst Krause, 7 June 1879, and letter to Ernst Krause, 9 June [1879]). The final text of the Krause's essay did not mention Butler's book directly, but it did allude to it unfavourably in the last sentence. When Butler read *Erasmus Darwin*, he noted the reference to his work, and seized upon an inconsistency in the preface, where Darwin stated that Krause's piece had been written in 1879, before *Evolution old and new* was published. Butler wrote to Darwin on 2 January 1880 for an explanation: 'Among the passages introduced are the last six pages of the English article, which seem to condemn by anticipation the position I have taken as regards Dr Erasmus Darwin in my book *Evolution old & New*, and which I believe I was the first to take.' Darwin tried to resolve the matter in private, explaining that such revision was 'common practice', and offering an apology: 'it never occurred to me to state that the article had been modified; but now I much regret that I did not do so' (letter to Samuel Butler, 3 January 1880). At the top of Butler's letter, Emma Darwin wrote: 'it means war we think'. William agreed: 'there was something of the viper in the tone of the letter, I fancy he wants a grievance to hang an article upon' (letter from W. E. Darwin, [28 January 1880]).

Butler had once been an enthusiastic supporter of Darwin, but he had grown critical of natural selection and the apparent lack of purpose that such a theory implied. He found inspiration in earlier developmental theories, and in some of Darwin's harsh critics, especially St George Mivart. Butler was unsatisfied with Darwin's reply, and 'decided on laying the matter before the public' (letter from Samuel Butler, 21 January 1880). He stated his case in the *Athenaeum*, a leading literary weekly. He accused Darwin of purposely misleading his readers, and implied that

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the whole book had been written as an attack on himself. Darwin was extremely vexed by the accusations and uncertain about what to do. He drafted two versions of a letter to the *Athenæum*, sending one or both to his daughter Henrietta (letter to H. E. Litchfield, 1 February [1880]). ‘The world will only know ... that you & Butler had a controversy in which he will have the last word’, she warned (letter from H. E. Litchfield, [1 February 1880]). ‘He is a virulent Salamander of a man who will fight to the end’, added her husband Richard (letter from R. B. Litchfield, 1 February 1880). Even the great controversialist Thomas Huxley recommended silence: ‘take no notice whatever ... I am astounded at Butler—who I thought was a gentleman ... Has Mivart bitten him & given him Darwinophobia? It is a horrid disease’ (letter from T. H. Huxley, 3 February 1880).

All went quiet until November, when a new book by Butler appeared (*Unconscious memory*) mentioning the affair at several points. The charge of wilful deceit was repeated, and fresh accusations were brought against Krause for quoting passages of Buffon and Coleridge from Butler’s text without acknowledgment. Krause wanted to mount a defence, squashing the ‘mosquito inflated to an elephant’ (letter from Ernst Krause, 9 December 1880). Again, Darwin felt compelled to reply, and family members rallied round, debating the best course of action. The affair highlighted some of the difficulties Darwin faced in engaging a critic outside the medium of correspondence or scientific publishing, a critic whom he clearly regarded as non-scientific. Seeking engagement with Darwin and failing to obtain it, Butler was outraged at his exclusion from scientific debate. The matter spilled over into January 1881. With Henrietta’s aid, the advice of a leading journalist was sought. Leslie Stephen’s reply on 12 January [1881] echoed that of Huxley: ‘take no further notice of Mr Butler whatever’ (*Correspondence*, vol. 29).

With Francis’s assistance, the last of Darwin’s botanical works was completed in the spring. Father and son had been experimenting steadily for over two years and finally concluded their observations in the early months of the year. Among the final objects of study was root-growth in *Megarrhiza californica* (a synonym of *Marah fabacea*, California manroot). Darwin had raised the plant from seeds sent by Asa Gray in December 1879. His observations differed, however, from the description of germination in the genus given by Gray in an article and textbook (A. Gray 1877 and A. Gray 1879, pp. 20–1). ‘I think you cannot have watched the whole process,’ he told Gray on 19 January; ‘Some [seeds] were placed by me on, and others half an inch beneath the surface, and others deeper—, but none of the cotyledons were lifted up. ... The sole use of this wonderful manner of growth which occurs to me is to hide the enlarged root, at least at first, beneath 2½ inches of soil as a protection against enemies.’ ‘Your letter ... made me open my eyes’, Gray replied on 3 February, but he affirmed his original description. Darwin was puzzled: ‘If my letter opened your eyes, yours has opened mine much wider. ... It is very strange that plants, if they belong to the same species, should behave so differently.’ (Letter to Asa Gray, 17 February 1880.) But Gray had based his description of *Megarrhiza* on specimens grown in pots. On receiving Darwin’s letters, he requested more seeds

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and information on the germination of the plant in its native habitat. He forwarded a letter from a botanist and schoolteacher in California, Volney Rattan, whose description agreed with Darwin's (letter from Asa Gray, 4 April 1880).

Having finished the manuscript, Darwin was puzzled about what to call it. He first suggested 'The Circumnutating Movements of Plants', writing to his publisher's business partner Robert Cooke on 23 April, 'My family shake their heads in the same dismal manner as you & M<sup>r</sup> Murray did, when I told them my proposed title'. He finally settled on 'Power of Movement in Plants', but was doubtful of the book's popularity and so proposed publishing at his own expense. The costs were considerable because of the large number of woodcuts and diagrams. When Cooke calculated the expense against prospective sales, he complained: 'Where is the profit for Author or publisher?' (letter from R. F. Cooke, 20 July 1880). 'I must take the risk & loss on my own shoulders', Darwin replied: 'As I have made some money by science, I must now lose some for science' (letter to R. F. Cooke, 21 July 1880). The worries were ill founded, however, for the book sold out quickly, and 500 more copies had to be printed at the end of November.

'It always pleases me to exalt Plants in the organic scale', Darwin wrote to Alphonse de Candolle on 28 May 1880. Readers trained in zoology realised the implications of the work for the plant–animal boundary, the origins of the nervous system, and the nature of 'sensitivity'. Francis Balfour described *Movement in plants* as 'a complete revelation— The remarkable nervous system without nerves, for I do not know what else to call it ... must have a most important bearing on speculations as to the origin of the nervous system in animals— One is almost led to wonder why a nervous system has become developed, when it is possible for so perfect an arrangement can exist without any corresponding structural differentiations' (letter from F. M. Balfour, [22 November 1880]). George Romanes, who had worked on the nerves of marine animals, suggested on 10 December that Darwin try experiments with bursts of light similar to those Romanes had performed on hydromedusa: 'How about the period of latent stimulation in these non-nervous and yet irritable tissues? And especially with reference to luminous stimulation it would be most interesting to ascertain whether the tissues are affected by brief *flashes* of light.'

After a favourable review appeared in *The Times*, Darwin was congratulated by an old Shropshire friend, Sarah Haliburton. She was one of the daughters of William Mostyn Owen, the squire of Woodhouse, where Darwin had gone hunting in his youth. 'Yesterday I read ... "Of all our living Men of Science, none have laboured longer, or to more splendid purpose than Mr Darwin", & it recalled to my mind, your boyish assertion made many many years ago, that "if ever Eddowe's Newspaper alluded to you, as "our deserving Fellow Townsman", your ambition would have been amply gratified"' (21 November [1880]). 'I had quite forgotten my old ambition about the Shrewsbury newspaper', Darwin replied on 22 November, 'but I remember the pride which I felt when I saw in a book about beetles the impressive words "captured by C. Darwin". ... This seemed to me glory enough for any man!' Renewed contact with Sarah put him in mind to call on her sister,

Fanny, with whom he had been on romantic terms before the *Beagle* voyage and her marriage to the politician Robert Biddulph. But the meeting seems to have been forestalled: ‘I had hoped to call & see whether M<sup>rs</sup> Biddulph would admit me, & had got her address, but a Russian naturalist came to luncheon & dined me half to death & then an American naturalist, & I was half dead. ... In former years I was, also, rarely fit to see anybody’ (letter to S. H. Haliburton, 13 December 1880).

After finishing the manuscript of *Movement in plants*, Darwin began writing what would be his final book, *Earthworms*. ‘My essay will be barely scientific’, he pretended, ‘but the subject has amused me’ (letter to W. C. McIntosh, 18 June 1880). Members of the family were enlisted to study worm burrows on agricultural land and the intake of stones and flints to aid digestion. He asked Francis to check for castings on old furrows in Wales, and wrote to William on 18 June, ‘I very much wish to examine under the microscope more of such particles of brick, tile, slate or any other artificial object, which could hardly have been worn except in the worm’s gizzard.’ While on honeymoon with his new wife, Ida, in the Alps, Horace spotted worms at high elevations, though he was more interested in new modes of transport: ‘We tramwayed to the bottom of the hill & walked up & trammed back. Then we saw a steam tram—imagine my excitement’ (letter from Horace Darwin to Emma Darwin, [18 September 1880]). Darwin’s Wedgwood nieces, Sophy and Lucy, were asked to recall observations made years ago on Leith Hill common: ‘If Lucy is with you, I know that she would readily look from her well-known affection for worms—I am also becoming deeply attached to worms.— Can Lucy remember what sort of lantern she used when she looked at the worms. We find that the light frightens them’ (letter to Sophy Wedgwood, 8 October [1880]).

The role of instinctive behaviour, which featured largely in Darwin’s study of worms, was a growing field of investigation. On reading *Souvenirs entomologiques* by Jean-Henri Fabre, Darwin suggested a further line of research on the homing ability of insects. The experiment involved placing ants in a circular box that could be rotated on an axle so as to confuse their sense of direction. ‘I formerly wished to try it with pigeons’, he told Fabre on 31 January; ‘If this plan failed, I had intended placing the pigeons within an induction coil, so as to disturb any magnetic or dia-magnetic sensibility which it seems just possible that they may possess.’ Fabre described an analogous practice performed in Belgium on cats: ‘it is customary to turn a cat round in a bag if one wants to take it elsewhere, and thus one looks to prevent its return’ (letter from J.-H. Fabre, 18 February 1880). Darwin shared the letter with Romanes, who later tried the experiment with cats on Wimbledon Common, driving them several miles into the country, and letting them out of their respective bags (letter from G. J. Romanes, [6, 13, or 20] March 1881). Romanes was at work on a lengthy study of animal intelligence and sent Darwin a diagram showing the evolution of emotions and intellect across the animal world. Darwin was reminded of his early observations of infants, pets, and zoo animals, which had formed the basis of his writing in *Descent* and *Expression*. He offered detailed comments on 5 February: ‘I should have thought that the word ‘love’ (not sexual passion) as shown

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very low in scale to offspring & apparently to comrades, ought to have come in more prominently in your table than appears to be the case.' In his reply of 6 February, Romanes clarified: 'By 'Love' I intend to denote the complex emotion (dependent on the representative faculties) which, having been so lately smitten myself, I am perhaps inclined to place in too exalted a position.' Romanes was soon married to Ethel Duncan. After the first child was born, the men joked about keeping a monkey in the nursery 'for purposes of comparison'. Darwin encouraged the experiment, but conceded, 'M<sup>rs</sup> Romanes is quite right not to allow the monkey to enter the nursery, for how dreadful it would be if the monkey received more attention than the baby!' (letter from G. J. Romanes, 17 December 1880, and letter to G. J. Romanes, 20 December 1880).

Darwin's fame and the broad implications of his work continued to attract correspondents with diverse backgrounds and interests. In February, a 12-year-old boy asked politely, 'What causes the different shades of colour in the inhabitants of the earth ... If in a few words you could give me any idea of the reasons, I should be greatly obliged' (letter from W. Z. Seddon, 2 February 1880). Darwin sympathised with the pupil; 'I wish that you or anybody else could account for the colours of the different races of man.' He referred him to the brief explanation in *Descent of man*, 'which,' he added, 'hardly anybody has accepted' (letter to W. Z. Seddon, 4 February 1880). On 16 February, 'an ardent student', Henry Faulds, sought help in collecting finger and palm impressions from 'living men of all races', pointing out the possible forensic use of the data, and, since he had a few palm prints from monkeys, the light that might be thrown on human evolution. Darwin rightly thought the 'queer subject' of interest to Francis Galton, who had already taken thumb impressions of criminals, and who suggested extending the study to public-school pupils (letter to Francis Galton, 7 April 1880, and letter from Francis Galton, 8 April 1880). Darwin was queried about human mortality and gave a cautious reply: 'I suppose that no one can prove that death is inevitable, but the evidence in favour of this belief is overwhelmingly strong. ... As evolution depends on a long succession of generations, which implies death, it seems to me in the highest degree improbable that man should cease to follow the general law of evolution, and this would follow if he were to be immortal. This is all that I can say' (letter to A. Gapitche, 24 February 1880). When approached by the radical socialist Edward Aveling for permission to dedicate a popular book to him, Darwin was more hesitant. The book, *The student's Darwin*, was based on a series of articles that had appeared in the radical weekly *National Reformer*. Darwin was grateful for the honour, but declined: 'though I am a strong advocate for free thought on all subjects, yet it appears to me ... that direct arguments against christianity & theism produce hardly any effect on the public; & freedom of thought is best promoted by the gradual illumination of men's minds, which follows from the advance of science. ... I may, however, have been unduly biassed by the pain which it would give some members of my family, if I aided in any way direct attacks on religion' (letter to E. B. Aveling, 13 October 1880). Finally, Darwin received a tribute in the form of

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eugenic verse from a French poet and physician. ‘La Lutte pour la vie’ (The struggle for life), described the relentless battle of the strong against disease, infirmity, idiocy, and excess; even the ‘noble science’ of medicine should heed the warning: ‘The weak must not procreate the race/ If they do not want to leave an indelible trace’ (letter from Jules Rouquette, 2 April 1880).

Despite Darwin’s own weakness, which was often used to keep visitors at bay, admirers were admitted to Down House in record numbers. Forty-three members and friends of the Lewisham and Blackheath Scientific Association were received in the drawing room and veranda on 10 July. According to the report of the visit, Darwin ‘exhibited and described some of his most prized curiosities’, including the albums he had received from German and Dutch naturalists on his 70th birthday, and some of his recent work on earthworms. He then retired from faintness and fatigue, ‘bidding his visitors adieu’. The group went on to the White Hart Hotel in Orpington, where they toasted Darwin’s health, and a member pronounced him ‘one of the most painstaking of naturalists ... most genial of men ... [and] perhaps the most vehemently abused person in existence’ (*Proceedings of the Lewisham and Blackheath Scientific Association* (1880): 19–20). In November, a delegation from the Yorkshire Naturalists’ Union visited Down to present Darwin with a memorial address. ‘We hope there will not be too many for your convenience,’ the secretary wrote, ‘but the difficulty has been to limit the number of our members who wish to do honour to the greatest biologist of our time’ (letter from W. D. Roebuck to G. H. Darwin, 25 October 1880). The president of the society explained to Emma that the members of the union wished to congratulate Darwin ‘on his having lived to see his great doctrines ... “Come of Age”’ (letter from W. C. Williamson to Emma Darwin, 2 September 1880). In April, Thomas Huxley had delivered an address at the Royal Institution, ‘The coming of age of the Origin of species’. Darwin admitted that the meaning of the title had eluded him: ‘I had read the announcement of your Lecture & thought that you meant the maturity of the subject, until my wife one day remarked, “yes it is about 21 years since the Origin appeared”’ (letter to T. H. Huxley, 11 [April] 1880). While praising *Origin*, Huxley had failed to mention natural selection in the address, preferring to emphasise the wide acceptance of evolution in general: ‘I saw your motive’, Darwin remarked; ‘But at the same time it occurred to me that you might be giving it up. ... If I think continuously on some half-dozen structures of which we can at present see no uses, I can persuade myself that natural selection is of quite subordinate importance. On the other hand when I reflect on the innumerable structures, especially in plants, which 20 years ago would have been called simply ‘morphological’ & useless, & which are now known to be highly important, I can persuade myself that every structure may have been developed through natural selection’ (letter to T. H. Huxley, 11 May 1880).

In the autumn, Darwin renewed his efforts to obtain financial assistance for the co-discoverer of natural selection, Alfred Russel Wallace. In the previous year, he had consulted Joseph Dalton Hooker about the possibility of a Civil List pension, but Hooker was against it, fearing that Wallace’s spiritualism and an ill-judged wager

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on the sphericity of the earth might damage the cause. Nor was he in absolute poverty: ‘Wallace’s claim is not that he is in need, so much as that he can’t find employment’ (*Correspondence* vol. 27, letter from J. D. Hooker, 18 December 1879). For some years, Wallace’s main source of income had been writing for periodicals. He had applied for various institutional posts, but without success. On 20 March, Darwin heard more about Wallace’s plight from the geologist Alfred Tylor: ‘Is it not possible that some small appointment should be found for him? He feels the labour of working for the Booksellers rather trying I fear when he is not very strong He is 57 years of age and has been much discouraged since he was unsuccessful in his application for the manager of Epping Forest’. In October, Darwin had discussions with John Lubbock and Huxley and was encouraged about Wallace’s prospects for a government pension. Civil List pensions had been established in 1834 and were occasionally awarded for ‘useful discoveries in science and attainments in literature and the arts’. The decision largely rested with the prime minister, who recommended candidates to the Crown. Darwin asked Arabella Buckley, who had served as Charles Lyell’s secretary, to draft a statement of Wallace’s claims: ‘If I were to ask Wallace any of these questions he would think me mad or impertinent’ (letter to A. B. Buckley, 31 October [1880]). Buckley reported back on 7 November: ‘At first he hesitated but when I represented that such men as Joule & Faraday had received it he said “I confess it would be a *very great relief* to me and if such men as Darwin & Huxley think I may accept it I suppose I may”’. Darwin was committed to the cause: ‘I hardly ever wished for anything more than I do for the success of our efforts’ (letter to A. B. Buckley, 9 November 1880). He worked with Huxley on a memorial. One of the achievements they highlighted was Wallace’s extensive work on geographical distribution. Darwin and Hooker both praised his most recent book on the subject, *Island life*, which appeared in October 1880. ‘It is splendid,’ Hooker wrote on 22 November, ‘what a number of cobwebs he has swept away.— that such a man should be a Spiritualist is more wonderful than all the movements of all the plants.’ The document was finished in early December and signatures were gathered from leading scientific figures. Hooker agreed to sign, though he still worried about Wallace’s spiritualism, writing on 26 November: ‘I am doubtful as to whether it should not be mentioned privately to the Minister. I am writing to Huxley to this effect.’ Huxley concurred, for Darwin later urged that the religious matter be left out of the official memorial: ‘I cannot see that there is the least necessity to call any minister’s attention to Spiritualism, or to repeat (what you said) to Gladstone—that Spiritualism is not worse than the prevailing superstitions of this country!’ (letter to T. H. Huxley, [after 26 November 1880]). The memorial was eventually submitted to Gladstone in January 1881 and was successful. For a copy of the draft and further details, see Appendix VI.

Government assistance was sought for another worthy cause: potatoes. Darwin had tried for four years to aid the Irish businessman James Torbitt in his efforts to breed a blight-resistant variety. Appeals for state support had not succeeded, and so private subscriptions were raised, with Darwin, Thomas Farrer, and James



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Caird leading the campaign. In February, Darwin learned that Torbitt was again in financial trouble. ‘If you are not utterly weary of the subject’, he wrote to Farrer on 14 February 1880, ‘will you read this letter— It seems that Mr T is too poor to go on without aid, and it will be a grievous shame ... I would subscribe £50 but I have not strength or time to go begging for the remainder’. Torbitt had had mixed success with his varieties, but was still optimistic: ‘I think that in a few years, if not lost, they will be worth some millions per annum to England’ (letter from James Torbitt, 5 March 1880). Darwin met with Farrer and quickly raised £150, but he was not sanguine about government assistance. ‘As far as I can see political men care only about their party quarrels’ (letter to James Torbitt, 9 May 1880). Politicians grew concerned however, after severely damaged potato crops in Ireland brought hardship, with many labourers in destitution, farmers facing eviction, and threats of violence against English landlords from the Irish Land League. In May, a parliamentary committee was established to report on the best means of producing disease-resistant varieties. Torbitt hoped that his work would finally be appreciated. He tried to interest the chief secretary for Ireland, William Edward Forster, and when that failed, he decided to appeal directly to the prime minister, drafting a letter to William Gladstone on 15 December 1880: ‘It would mean a supply of home grown food sufficient to defy foreign competition, and at the same time maintain intact, the rental of England—and to Ireland it would mean peace.’ Torbitt’s plan was to distribute potatoes ‘gratis to the people’ through the Post Office, ‘until the whole kingdom should be flooded with disease-proof new varieties’ (letter from James Torbitt, 23 December 1880, enclosure.) Following Darwin’s advice, Torbitt did not send his letter directly to Gladstone, but to the press. It was printed in a number of provincial newspapers, but Torbitt’s grand plan was not realised.

The year was marked by the loss of several close family members. Emma’s brother Josiah Wedgwood III died on 11 March. Like Emma, he had married a cousin: Caroline, Darwin’s elder sister. The couple had settled at Leith Hill Place in Surrey, which became a regular destination for Charles and Emma, and also a site of scientific observation for the Wedgwood nieces. Later in the year, Emma’s sister Elizabeth Wedgwood died at her home, Tromer Lodge in Down. ‘As good & generous a woman as ever walked this earth,’ Darwin wrote to Romanes on 14 November [1880]. Darwin was also touched by the loss of his second cousin William Darwin Fox. They had been at Cambridge together, and had shared an enthusiasm for hunting and beetle collecting. Fox had become a country vicar, the vocation that Darwin once assumed he would follow himself. Despite their divergent paths, the men had continued to correspond over the years. On learning that Fox was gravely ill, Darwin wrote to his son, ‘in the course of my life, now a long one, I can truly say that I have never known a kinder or better man.— I can therefore feel what a loss he will be to you all.’ After Fox’s death, he wrote again in sympathy, ‘I have now before my eyes his bright face as a young man, so full of intelligence & I hear his voice as clearly as if he were present’ (letters to C. W. Fox, 29 March 1880 and 10 [April] 1880).

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Feeling increasingly old himself, Darwin took delight in his children's accomplishments. He consoled George about his poor health and difficulties with physical theory. He encouraged William's interest in geology, and longed to see Francis elected fellow of the Royal Society. He rejoiced to see Horace and Ida settled in their new home in Cambridge, and spent extended periods with Henrietta and Richard Litchfield in London. The children returned his support and affection with scientific assistance, editorial advice, and an extravagant present. Unable to bear the thought of their father suffering from the cold, they clubbed together to buy him a winter coat. Darwin was truly warmed by the gift: 'I have just found on my table your present of the magnificent fur-coat. If I have to travel in the winter, it will be a wonderful comfort ... The coat, however, will never warm my body so much as your dear affection has warmed my heart' (letter to the Darwin children, 17 [January 1880]). At the year's end, a Christmas card from another old friend, John Maurice Herbert, inspired happy memories of youth and reflections on his lifetime of 'grinding' labour in science as an abiding pleasure: 'my memory often goes back to Cambridge days ... Oh dear, life was worth then living, not that I have anything to complain of. ... I go on working at Science & in fact I am turned into a sort of machine for observing facts & grinding out conclusions, & am never happy except when at work' (letter to J. M. Herbert, 25 December [1880]).

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The editors are grateful to the late George Pember Darwin and to William Darwin for permission to publish the Darwin letters and manuscripts. They also thank the Syndics of Cambridge University Library and other owners of manuscript letters who have generously made them available.

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Institutions and individuals all over the world have given indispensable help by making available photocopies or digital images of Darwin correspondence and other manuscripts in their collections. Those who furnished copies of letters for this volume can be found in the List of provenances. The editors are indebted to them, and to the many people who have provided information about the locations of particular letters.

The editors make daily use of the incomparable facilities of Cambridge University Library and have benefited greatly from its services and from the help and expertise of its staff, particularly the staff of the Manuscripts and Reader Services departments. We are especially grateful to the University Librarian, Jessica Gardner, and to her predecessors Anne Jarvis, Peter K. Fox, and Frederick W. Ratcliffe, and to the Keeper of Archives and Modern Manuscripts, Katrina Dean, and her predecessors Suzanne Paul and Patrick Zutshi, for their generous support. Other members of the library's staff who frequently respond to the editors' requests are: Marjolein Allen, Wendy Aylett, Jim Bloxam, Frank Bowles, Mark Box, Louise Clarke, Colin Clarkson, Jacqueline Cox, Maureen Dann, Amélie Deblauwe, Emily Dourish, Anna Johnson, Scott Maloney, Charlotte Marriott, Błażej Miłkula, Domniki Papadimitriou, Maciej Pawlikowski, Adam Perkins, Ben Perks, Nicholas Smith, Anne Taylor, Ngaio Vince-Dewerse, John Wells, and Jill Whitelock. The fetchers in the Rare Books reading room have also patiently dealt with the editors' often complex requirements, as have the staff of the Map Room.

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We gratefully acknowledge the families and estates of letter authors for permission to include their works in this publication, and particularly the Darwin family for permission to publish the texts of all letters written by Charles Darwin.

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Darwin Correspondence Project  
Cambridge University Library  
West Road  
Cambridge  
United Kingdom  
CB3 9DR

Email: [darwin@lib.cam.ac.uk](mailto:darwin@lib.cam.ac.uk)

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## PROVENANCES

The following list gives the locations of the original versions of the letters printed in this volume. The editors are grateful to all the institutions and individuals listed for allowing access to the letters in their care. Access to material in DAR 261 and DAR 263, formerly at Down House, Downe, Kent, England, is courtesy of English Heritage.

Aguttes (dealers)

American Philosophical Society, Philadelphia, Pennsylvania, USA

Archives de la famille de Candolle (private collection)

Archives of the Gray Herbarium, Harvard University, Cambridge, Massachusetts, USA

Archives of the New York Botanical Garden, Bronx, New York, USA

F. Louise Nash Barton (private collection)

Bayerische Staatsbibliothek, Munich, Germany

Bedfordshire Archives and Records Service, Bedford, England

Pierre Bergé (dealer)

Biblioteca Comunale dell'Archiginnasio, Bologna, Italy

*Birmingham Daily Post* (publication)

Bodleian Library, Oxford, England

Bonhams, London (dealers)

Bonhams, New York (dealers)

British Library, London, England

Bromley Central Library, Local Studies Library and Archives, Bromley, Kent, England

Cambridge University Library, Cambridge, England

Christie's, London (dealers)

Christie's, New York (dealers)

Cleveland Health Sciences Library, Case Western Reserve University, Cleveland, Ohio, USA

Cornford Family Papers (DAR 275)

CUL. See Cambridge University Library

DAR. See Cambridge University Library

eBay (dealers)

Eidgenössische Technische Hochschule, Zurich, Switzerland

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Ernst-Haeckel-Haus, Friedrich-Schiller-Universität, Jena, Germany  
 Faulds [1912] (publication)  
 Fullerton [1930] (publication)  
 Harvard University Archives, Cambridge, Massachusetts, USA  
*Herald of Health* (publication)  
 Historical Society of Pennsylvania, Philadelphia, Pennsylvania, USA  
 The Huntington Library, San Marino, California, USA  
 Janet Huxley (private collection)  
 Imperial College of Science, Technology and Medicine, London, England  
 Indiana University, Lilly Library, Bloomington, Indiana, USA  
 James Innes (private collection)  
 Institut Mittag-Leffler, Djursholm, Sweden  
 International Institute of Social History, Amsterdam, The Netherlands  
 The John Rylands Library, The University of Manchester, Manchester, England  
 Laboratório Nacional de Energia e Geologia, Amadora, Portugal  
 Leeds University Library Special Collections, Leeds, England  
 Linnean Society of London, Piccadilly, London, England  
 Liverpool Central Library, Liverpool, England  
 Liverpool Record Office, Liverpool Central Library, Liverpool, England  
 Elizabeth Margaret Elliott Lucas (private collection)  
 Maggs Brothers (dealers)  
*Manchester Guardian* (publication)  
 Martin-Luther-Universität Halle-Wittenberg, Universitätsarchiv, Halle, Germany  
 Mitchell Library, State Library of New South Wales, Sydney, Australia  
*ML* (publication)  
 Muséum national d'Histoire naturelle, Bibliothèque centrale, Paris, France  
 National Library of Scotland, Edinburgh, Scotland  
 The National Library of Wales, Aberystwyth, Wales  
 National Records of Scotland, Edinburgh, Scotland  
 Natural History Museum, London, England  
*Nature* (publication)  
 The New York Public Library, New York, USA  
 The estate of Sandro Onestighel (private collection)  
 ornthomedia.com  
 Oxford University Museum of Natural History, Oxford, England  
 Paget 1901 (publication)  
 Peabody Essex Museum, Phillips Library, Salem, Massachusetts, USA  
 Placzek 1883 (publication)  
 Alfred S. Posamentier (private collection)  
 Private collections, whose owners wish to remain anonymous  
*Roma Etrusca* (publication)  
 E. D. Romanes 1896 (publication)  
 Roundell 1880 (publication)



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Royal Horticultural Society, Lindley Library, London, England  
 St Mark's National Theological Centre Library, Canberra, Australia  
 Shrewsbury School, Taylor Library, Shrewsbury, Shropshire, England  
 Skinner (dealers)  
 Smithsonian Libraries (Dibner Library of the History of Science and Technology),  
 Washington, District of Columbia, USA  
 Sotheby's (dealers)  
 Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Berlin, Germany  
 State Darwin Museum, Moscow, Russia  
 Sullivan family (private collection)  
 Swann Auction Galleries (dealers)  
 Torquay Museum Society, Torquay Museum, Torquay, Devon, England  
 Trustees of the Royal Botanic Gardens, Kew, Richmond, Surrey, England  
 Spike Tyson (private collection)  
 UCL Library Services, Special Collections, London, England  
 Universitäts- und Landesbibliothek Bonn, Bonn, Germany  
 University of British Columbia Library, Rare Books and Special Collections,  
 Vancouver, British Columbia, Canada  
 University of California Berkeley, Bancroft Library, California, USA  
 University of Chicago Library, Special Collections Research Center, Chicago,  
 Illinois, USA  
 University of Liverpool Library, Liverpool, England  
 Wellcome Library, London, England  
 John Wilson (dealer)  
 Jeffrey Winograd (private collection)  
 Yale Peabody Museum of Natural History, New Haven, Connecticut, USA

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## A NOTE ON EDITORIAL POLICY

The first and chief objective of this edition is to provide complete and authoritative texts of Darwin's correspondence. For every letter to or from Darwin, the text that is available to the editors is always given in full. The editors have occasionally included letters that are not to or from Darwin if they are relevant to the published correspondence. Volumes of the *Correspondence* are published in chronological order. Occasional supplements will be published containing letters that have come to light or have been redated since the relevant volumes of the *Correspondence* appeared. Letters that can only be given a wide date range, in some instances spanning several decades, are printed in the supplement following the volume containing letters at the end of their date range. The first such supplement was in volume 7 and included letters from 1828 to 1857; the second was in volume 13, and included letters from 1822 to 1864; the third was in volume 18, and included letters from 1835 to 1869; the fourth was in volume 24, and included letters from 1838 to 1875.

### *Dating of letters and identification of correspondents*

In so far as it is possible, the letters have been dated, arranged in chronological order, and the recipients or senders identified. Darwin seldom wrote the full date on his letters and, unless the addressee was well known to him, usually wrote only 'Dear Sir' or 'Dear Madam'. After the adoption of adhesive postage stamps in the 1840s, the separate covers that came into use with them were usually not preserved, and thus the dates and the names of many recipients of Darwin's letters have had to be derived from other evidence. The notes made by Francis Darwin on letters sent to him for his editions of his father's correspondence have been helpful, as have matching letters in the correspondence, but many dates and recipients have had to be deduced from the subject-matter or references in the letters themselves.

### *Transcription policy*

Whenever possible, transcriptions have been made from manuscripts. If the manuscript was inaccessible but a photocopy or other facsimile version was available, that version has been used as the source. In many cases, the editors have had recourse to Francis Darwin's large collection of copies of letters, compiled in the 1880s. Other copies, published letters, or drafts have been transcribed when they provided texts that were otherwise unavailable.

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The method of transcription employed in this edition is adapted from that described by Fredson Bowers in ‘Transcription of manuscripts: the record of variants’, *Studies in Bibliography* 29 (1976): 212–64. This system is based on accepted principles of modern textual editing and has been widely adopted in literary editions.

The case for using the principles and techniques of this form of textual editing for historical and non-literary documents, both in manuscript and print, has been forcefully argued by G. Thomas Tanselle in ‘The editing of historical documents’, *Studies in Bibliography* 31 (1978): 1–56. The editors of the *Correspondence* followed Dr Tanselle in his conclusion that a ‘scholarly edition of letters or journals should not contain a text which has editorially been corrected, made consistent, or otherwise smoothed out’ (p. 48), but they have not wholly subscribed to the statement made earlier in the article that: ‘In the case of notebooks, diaries, letters and the like, whatever state they are in constitutes their finished form, and the question of whether the writer “intended” something else is irrelevant’ (p. 47). The editors have preserved the spelling, punctuation, and grammar of the original, but they have found it impossible to set aside entirely the question of authorial intent. One obvious reason is that in reading Darwin’s writing, there must necessarily be reliance upon both context and intent. Even when Darwin’s general intent is clear, there are cases in which alternative readings are, or may be, possible, and therefore the transcription decided upon must to some extent be conjectural. Where the editors are uncertain of their transcription, the doubtful text has been enclosed in italic square brackets.

A major editorial decision was to adopt the so-called ‘clear-text’ method of transcription, which so far as possible keeps the text free of brackets recording deletions, insertions, and other alterations in the places at which they occur. Darwin’s changes are, however, recorded in the back matter of the volume, under ‘Manuscript alterations and comments’, in notes keyed to the printed text by paragraph and line number. All lines above the first paragraph of the letter (that is, date, address, or salutation) are referred to as paragraph ‘o’. Separate paragraph numbers are used for subscriptions and postscripts. This practice enables the reader who wishes to do so to reconstruct the manuscript versions of Darwin’s autograph letters, while furnishing printed versions that are uninterrupted by editorial interpolations. The Manuscript alterations and comments record all alterations made by Darwin in his letters and any editorial amendments made in transcription, and also where part of a letter has been written by an amanuensis; they do not record alterations made by amanuenses. No attempt has been made to record systematically all alterations to the text of copies of Darwin letters included in the correspondence, but ambiguous passages in copies are noted. The editors believe it would be impracticable to attempt to go further without reliable information about the texts of the original versions of the letters concerned. Letters to Darwin have been transcribed without recording any of the writers’ alterations unless they reflect significant changes in substance or impede the sense; in such cases footnotes bring them to the reader’s attention.

Misspellings have been preserved, even when it is clear that they were unintentional: for instance, ‘lawer’ for ‘lawyer’. Such errors often indicate excitement

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or haste and may exhibit, over a series of letters, a habit of carelessness in writing to a particular correspondent or about a particular subject.

Capital letters have also been transcribed as they occur except in certain cases, such as ‘m’, ‘k’, and ‘c’, which are frequently written somewhat larger than others as initial letters of words. In these cases an attempt has been made to follow the normal practice of the writers.

In some instances that are not misspellings in a strict sense, editorial corrections have been made. In his early manuscripts and letters Darwin consistently wrote ‘bl’ so that it looks like ‘lb’ as in ‘albe’ for ‘able’, ‘talbe’ for ‘table’. Because the form of the letters is so consistent in different words, the editors consider that this is most unlikely to be a misspelling but must be explained simply as a peculiarity of Darwin’s handwriting. Consequently, the affected words have been transcribed as normally spelled and no record of any alteration is given in the textual apparatus. Elsewhere, though, there are misformed letters that the editors have recorded because they do, or could, affect the meaning of the word in which they appear. The main example is the occasional inadvertent crossing of ‘l’. When the editors are satisfied that the intended letter was ‘l’ and not ‘t’, as, for example, in ‘stippers’ or ‘istand’, then ‘l’ has been transcribed, but the actual form of the word in the manuscript has been given in the Manuscript alterations and comments.

If the only source for a letter is a copy, the editors have frequently retained corrections made to the text when it is clear that they were based upon comparison with the original. Francis Darwin’s corrections of misreadings by copyists have usually been followed; corrections to the text that appear to be editorial alterations have not been retained.

Editorial interpolations in the text are in square brackets. Italic square brackets enclose conjectured readings and descriptions of illegible passages. To avoid confusion, in the few instances in which Darwin himself used square brackets, they have been altered by the editors to parentheses with the change recorded in the Manuscript alterations and comments. In letters to Darwin, square brackets have been changed to parentheses silently.

Material that is irrecoverable because the manuscript has been torn or damaged is indicated by angle brackets; any text supplied within them is obviously the responsibility of the editors. Occasionally, the editors are able to supply missing sections of text by using ultraviolet light (where text has been lost owing to damp) or by reference to transcripts or photocopies of manuscript material made before the damage occurred.

Words and passages that have been underlined for emphasis are printed in italics in accordance with conventional practice. Where the author of a letter has indicated greater emphasis by underlining a word or passage two or more times, the text is printed in bold type.

Paragraphs are often not clearly indicated in the letters. Darwin and others sometimes marked a change of subject by leaving a somewhat larger space than usual between sentences; sometimes Darwin employed a longer dash. In these

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cases, and when the subject is clearly changed in very long stretches of text, a new paragraph has been started by the editors without comment. The beginnings of letters, valedictions, and postscripts are also treated as new paragraphs regardless of whether they appear as new paragraphs in the manuscript. Special manuscript devices delimiting sections or paragraphs, for example, blank spaces left between sections of text and lines drawn across the page, are treated as normal paragraph indicators and are not specially marked or recorded unless their omission leaves the text unclear.

Occasionally punctuation marking the end of a clause or sentence is not present in the manuscript; in such cases, the editors have inserted an extra space following the sentence or clause to set it off from the following text.

Additions to a letter that run over into the margins, or are continued at its head or foot, are transcribed at the point in the text at which the editors believe they were intended to be read. The placement of such an addition is only recorded in a footnote if it seems to the editors to have some significance or if the position at which it should be transcribed is unclear. Enclosures are transcribed following the letter.

The hand-drawn illustrations and diagrams that occur in some letters are reproduced as faithfully as possible and are usually positioned as they were in the original text. In some cases, however, it has been necessary to reduce the size of a diagram or enhance an outline for clarity; any such alterations are recorded in footnotes. The location of diagrams within a letter is sometimes changed for typesetting reasons. Tables have been reproduced as close to the original format as possible, given typesetting constraints.

Some Darwin letters and a few letters to Darwin are known only from entries in the catalogues of book and manuscript dealers or mentions in other published sources. Whatever information these sources provide about the content of such letters has been reproduced without substantial change. Any errors detected are included in footnotes.

*Format of published letters*

The format in which the transcriptions are printed in the *Correspondence* is as follows:

1. *Order of letters.* The letters are arranged in chronological sequence. A letter that can be dated only approximately is placed at the earliest date on which the editors believe it could have been written. The basis of a date supplied by the editors is given in a footnote unless it is derived from a postmark, watermark, or endorsement that is recorded in the physical description of the letter (see section 4, below). Letters with the same date, or with a range of dates commencing with that date, are printed in the alphabetical order of their senders or recipients unless their contents dictate a clear alternative order. Letters dated only to a year or a range of years precede letters that are dated to a particular month or range of months, and these, in turn, precede those that are dated to a particular day or range of dates commencing with a particular day.

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2. *Headline.* This gives the name of the sender or recipient of the letter and its date. The date is given in a standard form, but those elements not taken directly from the letter text are supplied in square brackets. The name of the sender or recipient is enclosed in square brackets only where the editors regard the attribution as doubtful.

3. *The letter text.* The transcribed text follows as closely as possible the layout of the source, although no attempt is made to produce a type-facsimile of the manuscript: word-spacing and line-division in the running text are not adhered to. Similarly, the typography of printed sources is not replicated. Dates and addresses given by authors are transcribed as they appear, except that if both the date and the address are at the head of the letter they are always printed on separate lines with the address first, regardless of the manuscript order. If no address is given on a letter by Darwin, the editors have supplied one, when able to do so, in square brackets at the head of the letter. Similarly, if Darwin was writing from an address different from the one given on the letter, his actual location is given in square brackets. Addresses on printed stationery are transcribed in italics. Addresses, dates, and valedictions have been run into single lines to save space, but the positions of line-breaks in the original are marked by vertical bars.

4. *Physical description.* All letters are complete and in the hand of the sender unless otherwise indicated. If a letter was written by an amanuensis, or exists only as a draft or a copy, or is incomplete, or is in some other way unusual, then the editors provide the information needed to complete the description. Postmarks, endorsements, and watermarks are recorded only when they are evidence for the date or address of the letter.

5. *Source.* The final line provides the provenance of the text. Some sources are given in abbreviated form (for example, DAR 140: 18) but are listed in full in the List of provenances unless the source is a published work. Letters in private collections are also indicated. References to published works are given in author–date or short-title form, with full titles and publication details supplied in the Bibliography at the end of the volume.

6. *Darwin's annotations.* Darwin frequently made notes in the margins of the letters he received, scored significant passages, and crossed through details that were of no further interest to him. These annotations are transcribed or described following the letter text. They are keyed to the letter text by paragraph and line numbers. Most notes are short, but occasionally they run from a paragraph to several pages, and sometimes they are written on separate sheets appended to the letter. Extended notes relating to a letter are transcribed whenever practicable following the annotations as ‘CD notes’.

Quotations from Darwin manuscripts in footnotes and elsewhere, and the text of his annotations and notes on letters, are transcribed in ‘descriptive’ style. In this method the alterations in the text are recorded in brackets at the places where they occur. For example:

‘See Daubeny [‘vol. 1’ *del*] for \*descriptions of volcanoes in [*interl*] S.A.’ *ink*  
means that Darwin originally wrote in ink ‘See Daubeny vol. 1 for S.A.’ and then

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deleted ‘vol. 1’ and inserted ‘descriptions of volcanoes in’ after ‘for’. The asterisk before ‘descriptions’ marks the beginning of the interlined phrase, which ends at the bracket. The asterisk is used when the alteration applies to more than the immediately preceding word. The final text can be read simply by skipping the material in brackets. Descriptive style is also used in the Manuscript alterations and comments.

*Editorial matter*

Each volume is self-contained, having its own index, bibliography, and biographical register. A chronology of Darwin’s activities covering the period of each volume and translations of foreign-language letters are supplied, and additional appendixes give supplementary material where appropriate to assist the understanding of the correspondence. A cumulative index is planned once the edition is complete. References are supplied for all persons, publications, and subjects mentioned, even though some repetition of material in earlier volumes is involved.

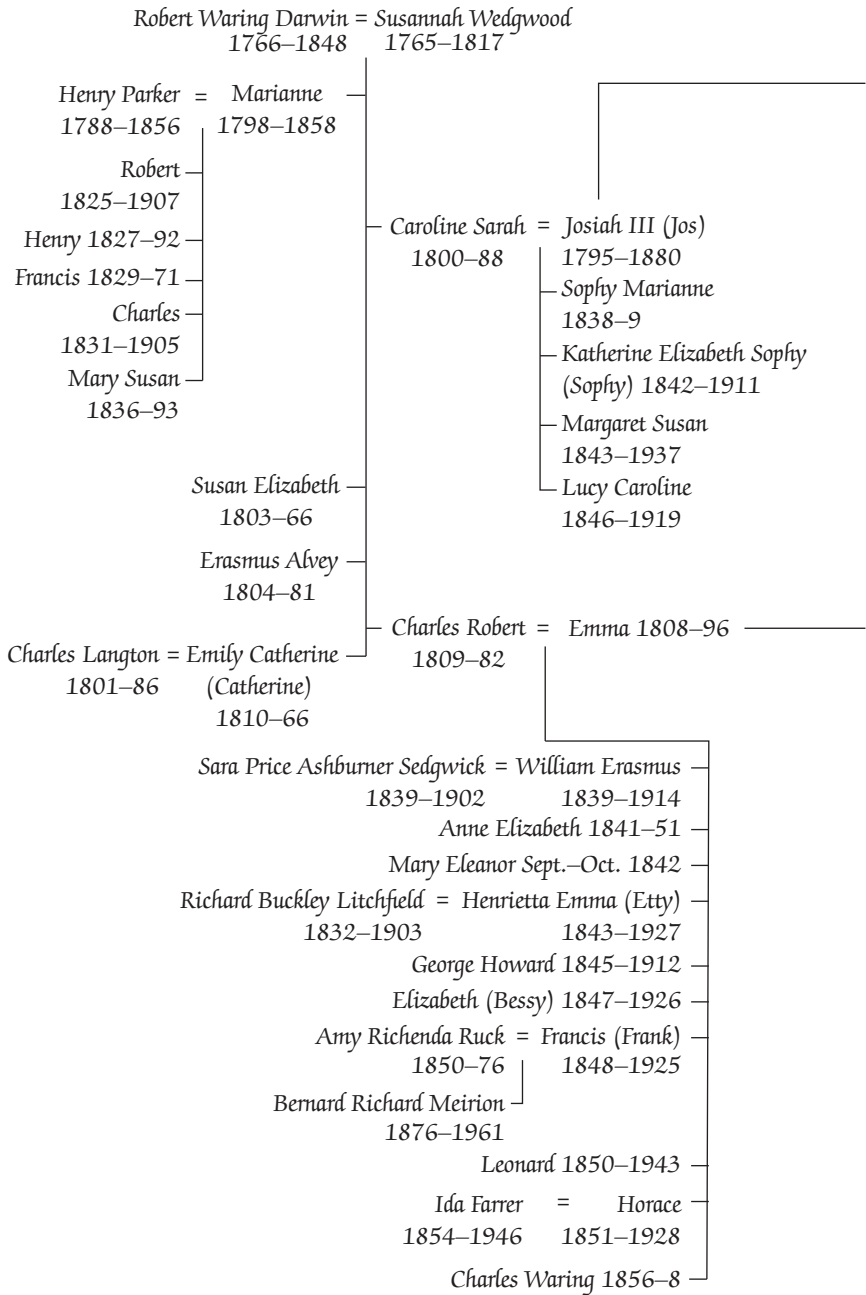
If the name of a person mentioned in a letter is incomplete or incorrectly spelled, the full, correct form is given in a footnote. Brief biographies of persons mentioned in the letters, and dates of each correspondent’s letters to and from Darwin in the current volume, are given in the Biographical register and index to correspondents. Where a personal name serves as a company name, it is listed according to the family name but retains its original order: for example, ‘E. Schweizerbart’sche Verlagsbuchhandlung’ is listed under ‘S’, not ‘E’.

Short titles are used for references to Darwin’s books and articles and to collections of his letters (e.g., *Descent*, ‘Parallel roads of Glen Roy’, *LL*). They are also used for some standard reference works and for works with no identifiable author (e.g., *Alum. Cantab.*, *Wellesley index*, *DNB*). For all other works, author–date references are used. References to the Bible are to the authorised King James version unless otherwise stated. Words not in *Chambers dictionary* are usually defined in the footnotes with a source supplied. The full titles and publication details of all books and papers referred to are given in the Bibliography. References to archival material, for instance that in the Darwin Archive at Cambridge University Library, are not necessarily exhaustive.

Darwin and his correspondents writing in English consistently used the term ‘fertilisation’ for the processes that are now distinguished as fertilisation (the fusion of female and male gametes) and pollination (the transfer of pollen from anther to stigma); the first usage known to the editors of a distinct term for pollination in English was in 1873 (*Correspondence* vol. 21, letter from A. W. Bennett, 12 July 1873). ‘Fertilisation’ in Darwin’s letters and publications often, but not always, can be regarded as referring to what is now termed pollination. In the footnotes, the editors, where possible, have used the modern terms where these can assist in explaining the details of experimental work. When Darwin or his correspondents are quoted directly, their original usage is never altered.

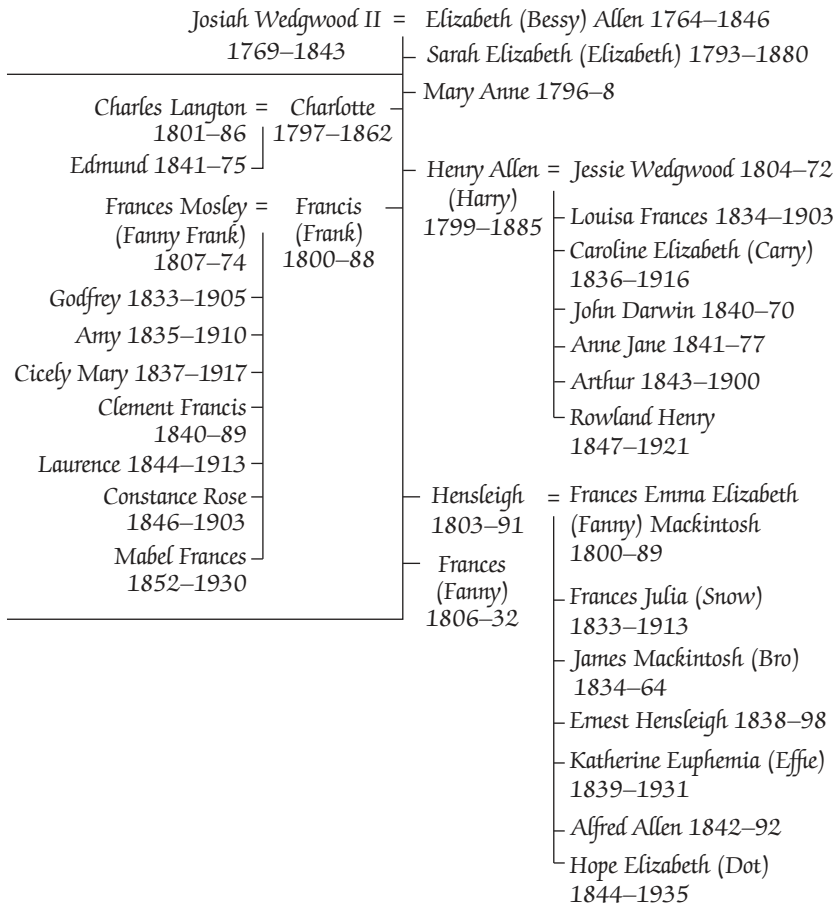
The editors use the abbreviation ‘CD’ for Charles Darwin throughout the footnotes. A list of all abbreviations used by the editors in this volume is given on p. xlii.

The Wedgwood and Darwin





## Families up to 1880



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## ABBREVIATIONS

|               |   |
|---------------|---|
| AL            | autograph letter                                      |
| ALS           | autograph letter signed                               |
| DS            | document signed                                       |
| LS            | letter in hand of amanuensis, signed by sender        |
| LS(A)         | letter in hand of amanuensis with additions by sender |
| Mem           | memorandum  |
| pc            | postcard  |
| (S)           | signed with sender's name by amanuensis               |
| TLS           | typed letter signed                                   |
| CD            | Charles Darwin  |
| CUL           | Cambridge University Library                          |
| DAR           | Darwin Archive, Cambridge University Library          |
| <i>del</i>    | deleted   |
| <i>illeg</i>  | illegible   |
| <i>interl</i> | interlined  |
| <i>underl</i> | underlined  |

## TRANSCRIPTION CONVENTIONS

|                      |  |
|----------------------|--|
| [some text]          | 'some text' is an editorial insertion  |
| /some text/          | 'some text' is the conjectured reading of an ambiguous word or passage                                       |
| [ <i>some text</i> ] | 'some text' is a description of a word or passage that cannot be transcribed, e.g., ' <i>3 words illeg</i> ' |
| { }                  | word(s) destroyed  |
| <some text>          | 'some text' is a suggested reading for a destroyed word or passage   |
| < <i>some text</i> > | 'some text' is a description of a destroyed word or passage, e.g., ' <i>3 lines excised</i> '                |