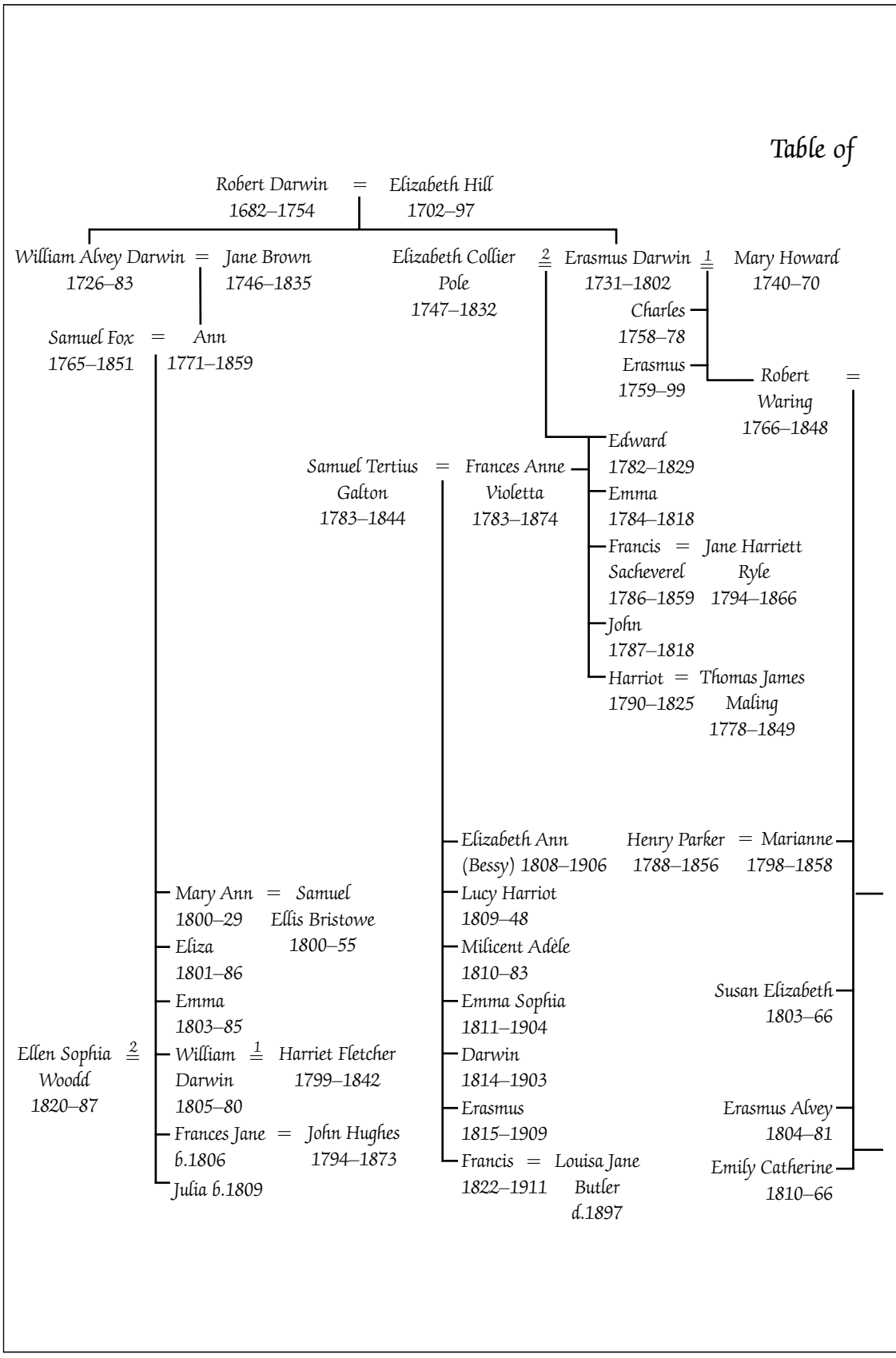

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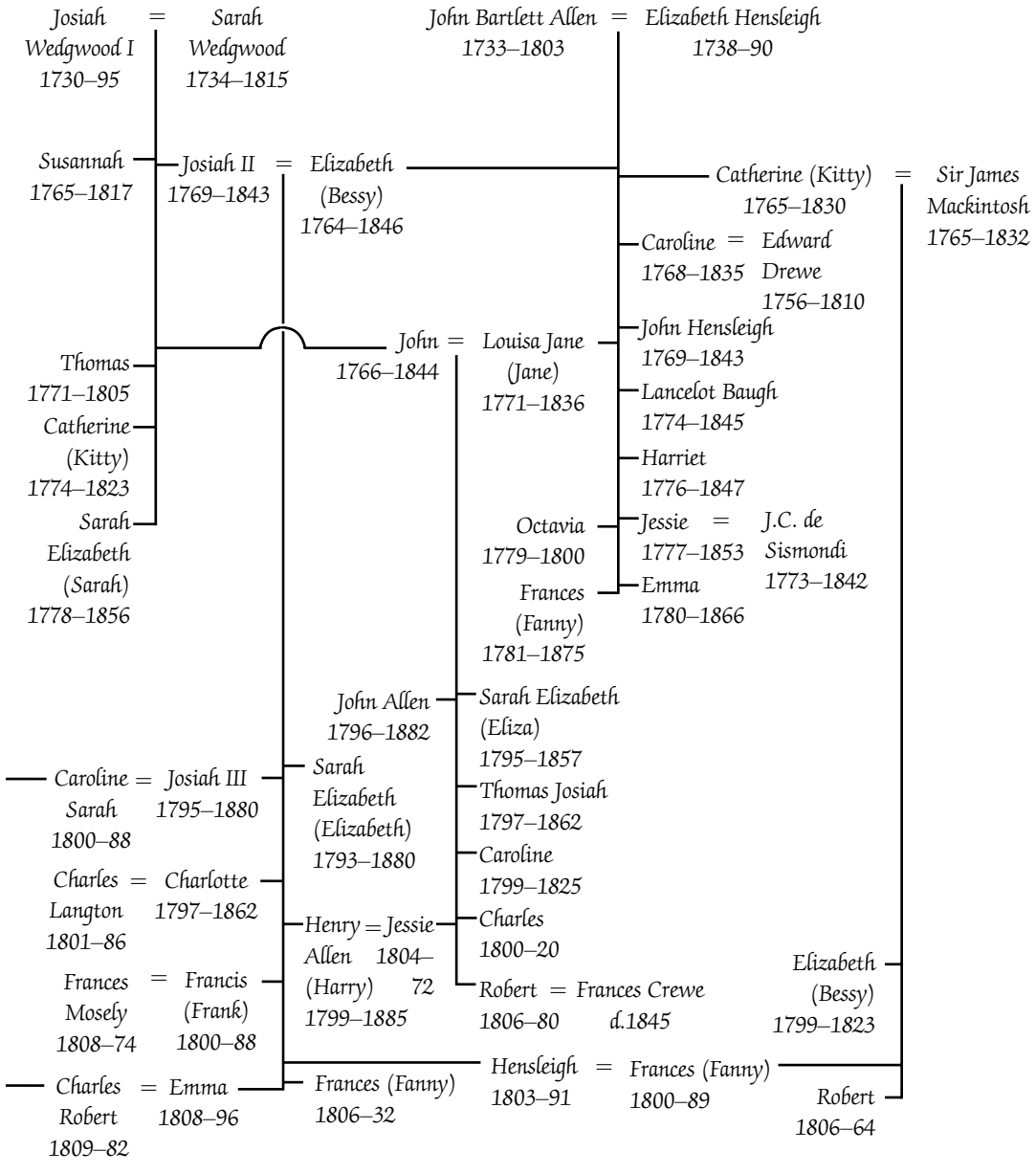

THE CORRESPONDENCE OF
CHARLES DARWIN

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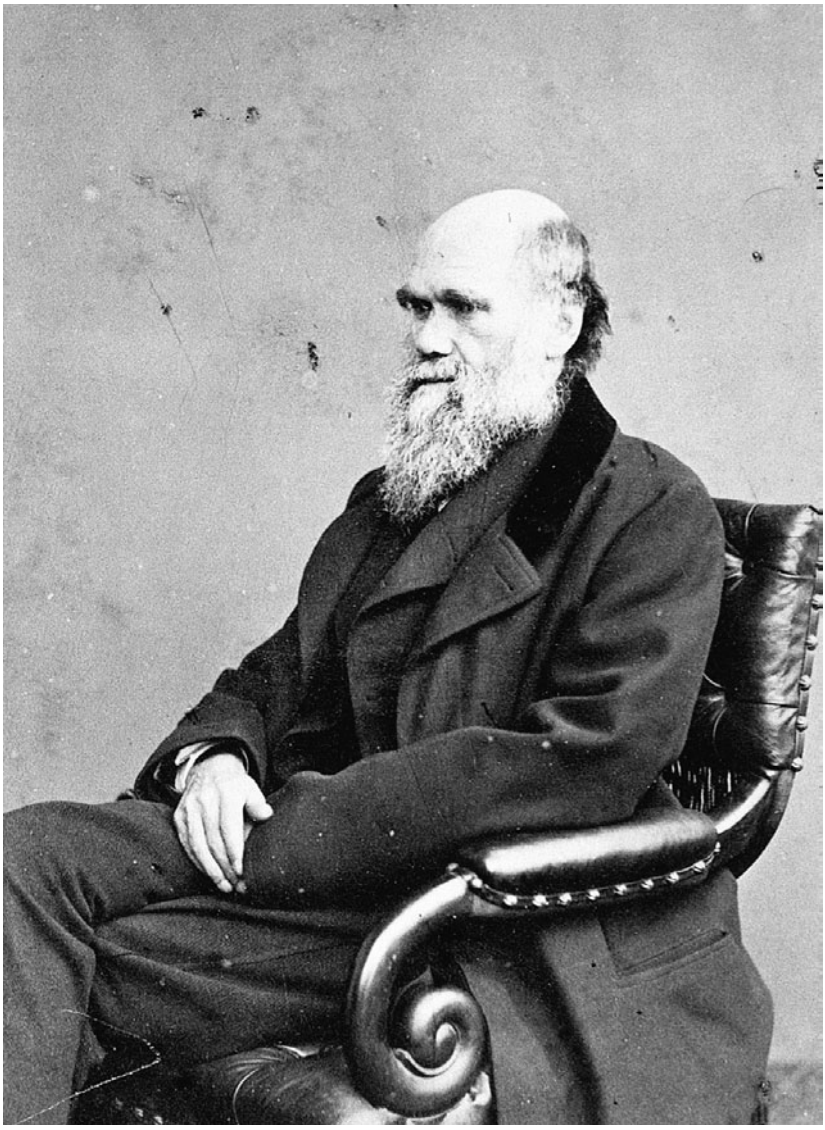

Charles Darwin in 1865
Photograph by the London Stereoscopic & Photographic Company
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THE CORRESPONDENCE OF CHARLES DARWIN

VOLUME 13 1865

SUPPLEMENT TO THE CORRESPONDENCE 1822–1864

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In Memoriam

GEORGE PEMBER DARWIN

1928–2001

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The following list is in the order of the entries in the *Calendar of the correspondence of Charles Darwin*. The first part includes all those letters that are listed in the *Calendar* for the year 1865, and those that have been redated into 1865. The second part includes the letters published in the supplement to this volume. 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, except where the letter has been moved out of 1865 into the Supplement to this volume.

Letters acquired after the publication of 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 marker 'f' denotes letters acquired after the second edition of the *Calendar* went to press in 1994.

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INTRODUCTION

In 1865, the chief work on Charles Darwin's mind was the writing of *The variation of animals and plants under domestication* (*Variation*). At the beginning of the year he was optimistic about publishing it that autumn, but a recurrence of illness forced him to abandon this plan, and he did not resume work on the book until December. However, several smaller projects came to fruition in 1865, including the publication of his long paper on climbing plants in the *Journal of the Linnean Society*, and, arising from this, the editing of excerpts from Fritz Müller's letters on climbing plants to make another paper. Darwin also submitted a manuscript of his hypothesis of pangenesis, intended for publication in *Variation*, to Thomas Henry Huxley for evaluation, and persuaded his friend Joseph Dalton Hooker to comment on a paper on *Verbascum* (mullein) by CD's protégé, John Scott, who was now working in India.

Darwin's transmutation theory continued to be discussed in both scholarly and popular publications. A lengthy discussion written by George Douglas Campbell, duke of Argyll, appeared in the religious weekly, *Good Words*. Darwin received news of an exchange of letters on his theory in a New Zealand newspaper; the letters were written by a supporter of his, Samuel Butler, and, according to Butler, the bishop of Wellington. Darwin's theory was discussed at an agricultural congress in Erfurt, Germany, and the proceedings were reported in the *Gardeners' Chronicle*. At the end of the year, Darwin was elected an honorary member of the Royal Society of Edinburgh.

The year was marked by three deaths of personal significance to Darwin: Hugh Falconer, a friend of Darwin's and prominent supporter of (though not a convert to) Darwin's theory, died at the end of January; Robert FitzRoy, captain of the *Beagle* on Darwin's 1831 to 1836 voyage, committed suicide at the end of May; and William Jackson Hooker, director of the Royal Botanic Gardens, Kew, and J. D. Hooker's father, died in August. There was also a serious dispute between two of Darwin's friends, John Lubbock and Charles Lyell. These events all inspired sombre reflections in Darwin's letters. Nevertheless, there were lighter moments. All the Darwin children were thriving, and when illness made work impossible, Darwin and Hooker read a number of novels, and discussed them in their letters.

Darwin's first letter to Hooker of 1865 suggests that the family had spent a cheerful Christmas together. 'We are all well', Darwin wrote, '& I enjoy much having all the Boys at home: they make the house jolly' (letter to J. D. Hooker, 7 January [1865]). Darwin was ready to submit his paper on climbing plants to the Linnean Society of London, and though he was clearly not perfectly well, his tone was enthusiastic

and energetic. However, on 31 January, Hugh Falconer died after a sudden illness. Falconer was 56, almost the same age as Darwin himself. Falconer had seconded Darwin's nomination for the Copley Medal of the Royal Society of London in 1864, had staunchly supported his candidacy, and had tried hard to persuade Darwin to accept the award in person (see *Correspondence* vol. 12). In early January Falconer had written to Darwin's brother, Erasmus Alvey Darwin, to reassure Darwin (or at least Erasmus) that he had 'stuck up' for *On the origin of species* (*Origin*), which the Council of the Royal Society had failed to include among the grounds of the award (see letter from Hugh Falconer to Erasmus Alvey Darwin, 3 January 1865). Erasmus forwarded his letters to Darwin, and Darwin responded warmly: 'Your letter is by far the grandest eulogium which I have ever received, or shall ever receive; and if one half—or one quarter be true and not exaggerated by your great kindness, I may well rest content that I have not laboured in vain' (letter to Hugh Falconer, 6 January [1865]).

Darwin's response to the news of Falconer's death was at first calm and philosophical: 'I am much grieved; It will be a great loss to science. What a lot of knowledge of all kinds has perished with him. He was always a most kind friend to me. So the world goes.—' (letter to J. D. Hooker, 2 February [1865]). However, Hooker, at the time recovering from a bout of influenza, wrote to Darwin at some length about Falconer's life and death, concluding gloomily: 'The inconceivability of our being born for nothing better than such a paltry existence as ours' is, gives me some hope of meeting in a better world. What does it all mean.— When we think what millions upon millions of lives & intellects it has taken to work up to a knowledge of gravity & Natural selection, we really do seem a contemptible creation intellectually & when we feel the death of friends more keenly the older we grow, we do strike me as being corporeally most miserable, for we have no pleasures to compensate fully for our griefs & pains: these alone are unalloyed' (letter from J. D. Hooker, 3 February 1865). Darwin, now 'haunted' by Hooker's account of Falconer's last sufferings, responded with an even more cosmic sense of futility, and with only the remotest sense of consolation: 'I quite agree how humiliating the slow progress of man is; but everyone has his own pet horror, & this slow progress, or even personal annihilation sinks in my mind into insignificance compared with the idea, or rather I presume certainty, of the sun some day cooling & we all freezing. To think of the progress of millions of years, with every continent swarming with good & enlightened men all ending in this; & with probably no fresh start until this our own planetary system has been again converted into red-hot gas.— Sic transit gloria mundi, with a vengeance' (letter to J. D. Hooker, 9 February [1865]).

Darwin had another cause for gloom: his health was poor throughout 1865, and at the beginning of the year he despaired of finding a doctor who could ease his symptoms. He wrote to Hooker for recommendations but added, 'I know it is folly & nonsense to try anyone' (letter to J. D. Hooker, 7 January [1865]). He particularly hated being ill because it affected his ability to read and write, and this, and his experiments, were, he claimed, important for his enjoyment of life.

He wrote to Charles Lyell on 22 January [1865], 'unfortunately reading makes my head whiz more than anything else. I am able most days to work for 2 or 3 hours & this makes all the difference in my happiness'. At the end of April, Darwin's condition worsened to the extent that he felt unable to do any work other than looking over the proofs of the second French edition of *Origin* (see CD's 'Journal', Appendix II). In May, he invited a new doctor, John Chapman, to Down and began a course of Chapman's ice treatment, which involved placing bags of ice along the spine. (A detailed list of Darwin's symptoms, which Darwin wrote for Chapman, is reproduced in Appendix IV.) The treatment proved to be ineffective, and Darwin had given it up by early July (see letter to J. D. Hooker, [10 July 1865]). In July, he consulted the physician Henry Bence Jones, who put him on a strict diet involving 'eating very little of anything, & that almost exclusively bread & meat' (letter to Asa Gray, 15 August [1865]). By October, Darwin thought he might be slowly getting better, attributing the improvement to Jones's diet (see letter to T. H. Huxley, 4 October [1865]). It was not until December, however, that he announced that he was 'able to write about an hour on most days' (letter to J. D. Hooker, 22 December [1865]).

Nevertheless, the letters Darwin wrote and dictated during the year show that he achieved a good deal and kept up some level of scientific activity–even if only being read to–during all but his worst periods of illness. *Variation*, which he had begun in January 1860, and which was intended to explain his theory of descent and the operation of natural selection in greater detail than *Origin*, was his greatest concern. In the early months of the year there are a number of letters to and from the poultry expert William Bernhard Tegetmeier concerning the draft of a manuscript on poultry that Tegetmeier was reading for Darwin and the commissioning of artists to make woodcuts for *Variation*. In March Darwin wrote to his publisher, John Murray, 'Of present book I have 7 chapters ready for press & all others very forward, except the last & concluding one' (letter to John Murray, 31 March [1865]). In April he authorised Murray to advertise the book, but warned: 'my health is extremely precarious and . . . it depends upon this and upon nothing else whether my book will be ready for the press in the autumn' (letter to John Murray, 4 April [1865]). In early June, he wrote to Murray to announce that there was now 'no chance' that he would be ready to publish in the autumn, assuring him, however, 'I am never idle when I can do anything' (letter to John Murray, 2 June [1865]). It was not until 25 December that he resumed work on *Variation* where he had left off in April (CD's 'Journal', Appendix II). In the event, because of further illness and delay, the book was not published until January 1868.

As was usual with him, however, Darwin had a number of smaller projects on hand at the same time as the great one. In January he expected his manuscript on climbing plants back from the copyist, and was wondering whether to send it to the Linnean Society, or to the Royal Society of London, who he thought might be more willing to bear the expense of the woodcuts (letter to J. D. Hooker, 7 January [1865]). After sending the manuscript to the Linnean, he complained to Hooker: 'For the

last ten days I have done nothing but correct refractory sentences, & I loathe the whole subject like tartar emetic' (letter to J. D. Hooker, 19 January [1865]). An abstract of the paper was read before the Linnean Society on 2 February, and in April Darwin wrote to his friend Asa Gray, a botanist in the United States, that he had started correcting proofs in preparation for its publication: 'I think it contains a good deal new & some curious points, but it is so fearfully long, that no one will ever read it. If, however, you do not *skim* through it, you will be an unnatural parent, for it is your child' (letter to Asa Gray, 19 April 1865; Darwin noted at the beginning of 'Climbing plants' that he had been led to the subject by a paper of Gray's). This work seems to have continued after the worst phase of Darwin's illness, in May, for in early June Darwin was ordering books that he needed for references, probably from the Linnean Society (letter to [Richard Kippist], 4 June [1865]). The paper was published in a double issue of the *Journal of the Linnean Society* in June, and a commercial offprint was also made, as well as a set for the author (Freeman 1978).

The publication of 'Climbing plants' led to a small collaborative exercise later in the year. One of the people to whom Darwin sent a copy of the paper was Fritz Müller, in Destêrro (now Florianópolis), Brazil. Darwin had received a copy of Müller's book, *Für Darwin*, a study of the Crustacea with reference to Darwin's theory of transmutation, in or before November 1864 (*Correspondence* vol. 12, letter to Ernst Haeckel, 21 November [1864]). Since it was, according to Darwin, in difficult German, he had it translated, and wrote to Müller in August 1865 that he had just finished hearing it read aloud (letter to Fritz Müller, 10 August [1865]). Over the next few months, Müller submitted to Darwin a wealth of observations on climbing plants in Destêrro, excerpts from which Darwin edited and submitted in October to the Linnean Society for publication in Müller's name (see letter from Fritz Müller, [12 and 31 August, and 10 October 1865]; since it is impossible to disentangle the original letters from the published version and rejoin them with other fragments that remain, the article is reprinted in this volume). Before submitting the letters to the Linnean Society, Darwin enlisted the help of Daniel Oliver, a botanist at Kew, to check one or two points that he did not clearly understand (letter to Daniel Oliver, 20 October [1865]). Darwin was particularly interested in Müller's observations of tendrils formed by the modification of branches, and made alterations to the second edition of *Climbing plants* reflecting Müller's findings. Although he wrote to Müller, 'I am sorry to say my health keeps so weak that I am not able to do any scientific work' (letter to Fritz Müller, 20 September [1865]), he clearly read Müller's letters (or heard them read) with close and active interest, raising questions and suggesting new lines of research.

A similar, though not so immediately productive, collaborative effort took place in the beginning of the year when John Scott, a protégé of Darwin's whom Darwin and Hooker had recently helped to find employment in India (see *Correspondence* vol. 12), sent Darwin the results of his experiments on *Verbascum*. Darwin had suggested to Scott in 1862, when Scott was working at the Royal Botanic Garden,

Edinburgh, that he should repeat Karl Friedrich von Gärtner's experiments on *Verbascum*, in which crosses between differently coloured varieties of the same or of different species were found to produce less seed than the parallel crosses between similarly coloured varieties (see *Correspondence* vol. 10, letter to John Scott, 19 November [1862]). Darwin had already written to Hooker of Gärtner's experiments: 'I do not think any experiment can be more important on Origin of species; for if he is correct, we certainly have what Huxley calls new physiological species arising' (*Correspondence* vol. 9, letter to J. D. Hooker, 28 September [1861]). Scott had evidently started his crossing experiments in 1863 (see *Correspondence* vol. 11, letter from John Scott, 21 September [1863]), and wrote up his results on his voyage to India in late 1864, despite suffering from sea-sickness (letter from John Scott, 21 July 1865). This may have been unwise: Thomas Thomson, a friend of Hooker's, described by him as a 'scientific arithmetician', found errors in Scott's calculations, and Hooker announced that the paper was 'not fit for publication' and 'awfully tedious to read', though he praised Scott's 'industry & ability' (letter from J. D. Hooker, [10 March 1865]). Scott took these criticisms, no doubt diplomatically conveyed by Darwin, in good part, and with some shame, and said that he would take up the work again when he had time (letter from John Scott, 21 July 1865); at the time of writing, he had recently accepted the position of curator of the botanic gardens at Calcutta. Scott eventually published his results in the *Journal of the Asiatic Society of Bengal* (Scott 1867), and Darwin summarised them in *Variation* 2: 106–7, concluding, 'it follows from Mr. Scott's experiments, that in the genus Verbascum the similarly and dissimilarly-coloured varieties of the same species behave, when crossed, like closely allied but distinct species'.

Darwin also continued to ponder some of the theoretical issues he intended to raise in *Variation*. At the end of May, a month in which his health had been particularly bad, he sent Thomas Henry Huxley a fair copy of a manuscript in which he attempted to connect the facts he had collected about 'bud—and seminal—variation, ... inheritance, reversion, effects of use & disuse &c', and which he intended to publish in *Variation*. Darwin seems to have submitted his 'Provisional hypothesis of pangenesis', as it later became, to Huxley's judgment with some trepidation. 'It is a very rash & crude hypothesis', he wrote, with characteristic self-deprecation, 'yet it has been a considerable relief to my mind, & I can hang on it a good many groups of facts.' (Letter to T. H. Huxley, 27 May [1865].)

The hypothesis of pangenesis that Darwin outlined to Huxley was briefly as follows: each individual cell throws off minute particles (gemmules) that circulate in the bodily fluids and are capable of generating new cells, though they remain dormant until required. The gemmules are drawn together by mutual attraction and into the right places in the right order to, for instance, reconstruct (in organisms that have that capability) a tail or other limb where one has been torn off. Cells throw off gemmules at all stages of development and all gemmules circulate until required: thus embryo gemmules thrown off by embryo cells come together, when conditions are right, to form what Darwin called the germ (the female element) or

the male element; the germ, if fertilised (or even if not, in the case of parthenogenesis), grows into a new embryo. Gemmules could also remain dormant for several generations before being sparked into activity. The hypothesis was clearly intended to offer a comprehensive account of heredity and development: Darwin thought that pangenesis could explain both sexual and asexual reproduction, as well as reversion and the regrowth of body parts.

The importance to Darwin of this hypothesis is obvious from his letter to Huxley, despite his apparent modesty, and the letter and associated manuscript throw an interesting light on his thinking. The hypothesis of pangenesis was ambitious in scope, and shows Darwin's work as a theorist. This provides a contrast with the painstaking amassing of data, designed eventually to build overwhelming support for his theory, if not to provide scientific proof, that was to all appearances his usual method of working. He asked Huxley not for detailed criticism, but for a brief verdict on whether he should publish it or not. Huxley's answer does not survive, but some idea of what he wrote to Darwin may be gathered from Darwin's letter to him of 12 July [1865]. Huxley had evidently pointed out some similarity between Darwin's views and those of Georges Louis Leclerc, comte de Buffon, and Charles Bonnet; Darwin wrote back: 'I do not doubt your judgment is perfectly just & I will try to persuade myself not to publish.' Huxley swiftly qualified what Darwin had apparently seen as a rather negative reaction in his letter to Darwin of 16 July 1865: 'Somebody rummaging among your papers half a century hence will find Pangenesis & say "See this wonderful anticipation of our modern Theories—and that stupid ass, Huxley, prevented his publishing them"... I am not going to be made a horrid example of in that way— But all I say is publish your views—not so much in the shape of formed conclusions—: as of hypothetical developments of the only clue at present accessible—and don't give the Philistines more chances of blaspheming than you can help'. A much revised and expanded version of the 1865 manuscript was published as chapter 27 of *Variation* in 1868.

Outside Darwin's own circle, discussions of the theory of transmutation were still taking place both in learned societies and in the popular press. In December 1864, George Douglas Campbell, the duke of Argyll, had delivered an address to the Royal Society of Edinburgh criticising *Origin*. Like Charles Lyell, who wrote to Darwin on 16 January 1865 praising the address, Campbell accepted Darwin's theory of transmutation only within certain limits. Campbell distinguished between laws such as natural selection, which determined the success of existing species or modifications, and 'creational laws', which produced modifications or new forms of life. According to Campbell, Darwin had frequently forgotten this distinction in *Origin*, and had written 'of natural selection "producing" this and that modification of structure' (G. D. Campbell 1864, pp. 275–6). Campbell argued further that natural selection could not account for the existence of beauty in the natural world, since it could only explain the existence of structures that were of direct use to organisms in the struggle for existence (*ibid.*, pp. 276–81). Darwin responded to Lyell's account in some detail (see letter to Charles Lyell, 22 January [1865]), ending pointedly: 'If

ever you sh[d] speak with the Duke on the subject please say how much interested I was with his Address & tell him about Sexual Selection.' The message may not have been sent, or if it was, it made no impression on Campbell, for he published similar arguments in 1865 in the religious weekly *Good Words*.

Campbell's reservations may have confirmed Darwin's view that Scottish scientific circles were in general not favourable to his theory; certainly he was surprised to find himself in December elected an honorary member of the Royal Society of Edinburgh. 'Here is a really curious thing, considering that Brewster is President & Balfour secretary', he wrote to Hooker on 22 December [1865]. David Brewster had criticised *Origin* for 'poisoning the foundations of science, and disturbing the serenity of the Christian world' (Brewster 1862, p. 3). John Hutton Balfour, though he had sent Darwin plant specimens on occasion, and was a friendly correspondent, had objected strongly to the potential application of the theory of transmutation to humans (see *Correspondence* vol. 10, letter from J. H. Balfour, 14 January 1862). According to Hooker, Balfour's prejudice against John Scott, who had worked under Balfour at the Royal Botanic Garden, Edinburgh, was compounded by Scott's interest in Darwin's theory (*Correspondence* vol. 11, letter from J. D. Hooker, 10 June 1863). However, probably the most enthusiastic encomium of the year also came from Scotland, from James Shaw, a schoolmaster with strong literary inclinations who wrote to Darwin: 'Newton's ocean of wonder on whose shore he gathered shells seems no longer a dark unnavigable sea crested with howling breakers. Here and there through its awful bosom the strong vision with which you have supplied us enables us to see at least that there are other islands whose conditions are explicable by our own' (letter from James Shaw, 20 November 1865). Shaw had also corresponded with Campbell in defence of Darwin.

Elsewhere, there was also encouraging news. In Germany, Darwin's theory, his supporters in that country informed him, was making good progress. In May, Darwin received the first instalment of Friedrich Rolle's *Der Mensch* (Rolle 1866), a study of the development of human society in the light of *Origin* and recent discoveries in geology. In September, a general agricultural congress held in Erfurt, Germany, discussed, among other things, Darwin's theory; this was reported in the *Gardeners' Chronicle*. Samuel Butler, the author and artist, and, in the 1860s, a supporter of Darwin's theory, had recently returned from New Zealand, and sent Darwin his pamphlet, *The evidence for the resurrection of Jesus Christ* (letter to Samuel Butler, 30 September [1865]). He later sent a copy of a letter defending Darwin's theory that he had written to the *Press*, a New Zealand newspaper; this was part of an pseudonymous exchange of letters with, he strongly suspected, the bishop of Wellington (letter from Samuel Butler, 1 October 1865). Darwin continued his correspondence with the entomologist Benjamin Dann Walsh in the Midwestern United States, and Asa Gray wrote a long review of 'Climbing plants' in the *American Journal of Science and Arts*, in which he described Darwin's botanical works as showing 'a genius for biological investigation, and a power of turning common materials and ordinary observations to high scientific account' (A. Gray 1865–6,

pp. 273–4). Darwin had also written to Gray on 19 April to express his happiness and relief at the end of the American Civil War.

More painful matters were also discussed in the correspondence. At the end of May, the dispute between Charles Lyell and John Lubbock over alleged plagiarism by Lyell was forced upon Darwin's notice. The affair is discussed in detail in Appendix V. In 1865, Lubbock published *Prehistoric times*, a work on human antiquity, adding a note to his preface asserting that Lyell in his *Antiquity of man*, published in 1863, had made unacknowledged use of Lubbock's earlier articles in the *Natural History Review*. He also cited a statement by Lyell in *Antiquity of man* that the pages containing his discussion of Danish kitchen-middens had been written *before* the publication of an article by Lubbock on the same subject and suggested that the statement was 'an inadvertence'. Though Lubbock had raised the matter with Lyell before publishing, this note, tantamount to an accusation of plagiarism, had not been authorised or even seen by Lyell, and when he read it in its published form, he wrote to Lubbock to protest. Not receiving a satisfactory response, he forwarded copies of his and Lubbock's letters on the subject to a number of friends, including Darwin, at the end of May. The letter sent to Darwin and its enclosures have not been found, so Lyell's letter to Hooker, which must have been substantially similar in content and had the same enclosures, is published in this volume.

Hooker, while acknowledging Lyell's fault, thought Lubbock's behaviour the more reprehensible, given Lyell's greater age and professional seniority (see letter from J. D. Hooker, [2 June 1865]); but Darwin's feelings seem to have been more evenly balanced, and he found the whole business distressing, perhaps the more so as his illness made it difficult for him to read attentively (see letter to J. D. Hooker, [4 June 1865]). The fact that both men were friends of his must also have made the crisis particularly painful. Lyell had been to some extent his mentor, but had not endorsed Darwin's theory of transmutation in print as explicitly as Darwin felt he had a right to expect from their private communications; Lubbock, a younger friend, had been encouraged and supported in his scientific work by Darwin, and supported Darwin's theory publicly. Though Hooker implicitly expected Darwin to take an active role, writing, 'I should like to join you in healing this ugly breach' (letter from J. D. Hooker, [2 June 1865]), Darwin seems to have avoided becoming involved. He wrote to Hooker, 'I doubt whether you or I or any one c^{d} do any good in healing this breach. Time alone could do it if it ever can be done' (letter to J. D. Hooker, [4 June 1865]); the hard work of reconciliation seems in the end to have been done by Huxley. In fact, Darwin's immediate anxieties seem to have been personal: perhaps because of his awareness of the collaborative nature of much of his work, he expressed a fear that he and Hooker might one day similarly fall out (letter to J. D. Hooker, 1 June 1865).

The correspondence throws light also on the personal lives of Darwin's closest friends. For Hooker in particular 1865 must have seemed on the whole a trying year. In January he had influenza (letter from F. H. Hooker, [27 January 1865]); before June his wife, Frances, had a miscarriage, from which she did not quickly

recover, and Hooker took her to Teesdale, County Durham, to convalesce (letter from J. D. Hooker, [15 June 1865]). This was evidently a happy and reasonably lazy time for Hooker. He wrote, 'I am studying the moraines all day long with as much enthusiasm as I am capable of after laying in bed till 9 eating heavy breakfasts & looking forward to dinner as the summum bonum of existence' (letter from J. D. Hooker, 13 July 1865); his observations on the moraines were published in the *Reader* (Hooker 1865), so he was, in fact, still working. In August, back at Kew, many of the family, including Hooker, contracted a throat infection. Hooker's father, William Jackson Hooker, who also caught it, rapidly succumbed to it and died on 12 August. Hooker himself contracted rheumatic fever after sleeping on the floor beneath an open window in his father's sick-room, and was unable to be with his father when he died or to attend the funeral. In early September, the family left Kew again for Hooker to convalesce, first with friends in Notting Hill, London, then in Buxton, Derbyshire. Even if he was unable to write in person, Hooker's enthusiasm for science and scientific society was evidently undimmed: Frances, writing to Darwin to notify him of their movements, wrote on Hooker's behalf, 'He asks if you saw the article of M^{r}. Croll in the last Reader on the displacement of the Earth's axis(?) by the ice of the glacial epoch?— & also do you know that the Reader has been sold to the Anthropologicals?' (letter from F. H. Hooker, 6 September [1865]). Before he returned from his convalescence, Hooker had been offered the directorship of the Royal Botanic Gardens, Kew (letter from F. H. Hooker, 13 September [1865]; he had been assistant director while his father was director). Upon his return to work in late October, he embarked on what must have been an exhausting programme of reform and reorganisation (letter from J. D. Hooker, [3 November 1865]).

Another distressing event was the suicide of Robert FitzRoy on 30 April 1865. The letters sent to Darwin by friends contain speculation about the reasons for his action and a detailed account of the funeral. FitzRoy, who was head of the Meteorological Department at the Board of Trade, had suffered much criticism from the scientific community over his national system of weather-forecasting (see letter from J. D. Hooker, 2 May 1865 and nn. 2 and 5), and he may have suffered, or imagined, other slights. Darwin, however, seems to have seen FitzRoy's action as an outcome of mental instability he had observed in him many years before: 'I was astounded at news about FitzRoy; but I ought not to have been, for I remember once thinking it likely; poor fellow his mind was quite out of balance once during our voyage. I never knew in my life so mixed a character. Always much to love & I once loved him sincerely; but so bad a temper & so given to take offence, that I gradually quite lost my love & wished only to keep out of contact with him' (letter to J. D. Hooker, 4 May [1865]). Darwin contributed to a fund set up to support FitzRoy's children (see letter from Charles Shaw, 3 October 1865).

Darwin's own family do not seem to have given him much anxiety over the course of the year. In January he wrote to Hooker that all the family were well, including Horace, who had been sickly for some years and was unable to attend school: 'Our boy Horace has made a sudden start in power of walking & that, I

think, is a very good sign of real improvement in health' (letter to J. D. Hooker, 7 January [1865]). All the children living away from home made frequent visits. William was working as a banker in Southampton. George was at Trinity College, Cambridge; in September Darwin was consulting, or encouraging George to consult, a friend, the civil engineer Edward Cresy, about his career (letter to Edward Cresy, 7 September [1865], and letter from Edward Cresy, 10 September 1865). Francis and Leonard were still at school in Clapham, south-west London, and Horace was seeing a private tutor. Henrietta took a long holiday at Hengwrt, a house in Wales rented by the Hensleigh Wedgwoods for the summer, and Elizabeth was evidently attending school, and spent some time travelling in Europe (Emma Darwin's diary (DAR 242), *Emma Darwin* (1905), 2: 207–8). Henrietta was called upon to give her opinion of the Lyell–Lubbock plagiarism affair (letter from J. D. Hooker, [2 June 1865]), and Darwin reported that she was 'much interested' (letter to J. D. Hooker, [17 June 1865]), though her only known comment on the affair, to her mother, ends, 'I wish people weren't so foolish'. In November, Darwin and Emma visited Erasmus in London (CD's 'Journal', Appendix II). Wedgwood and Darwin relatives visited Down House frequently, and Hooker also came for a short stay in March (Emma Darwin's diary, DAR 242).

While Darwin and Hooker were ill, they both read or had read to them novels and other literature, and this was evidently an activity that brought the families together. Darwin wrote to Hooker, 'My good women-kind read to me a great deal, but I dare not ask for much science & am not sure that I could stand it' (letter to J. D. Hooker, 27 [or 28 September 1865]). In June he wrote to Hooker that they had enjoyed an 'Indian novel' that Hooker had evidently recommended: it was probably Iltudus Thomas Prichard's *How to manage it*, a love-story set in the Indian Mutiny of 1857 to 1858 (letter to J. D. Hooker, [17 June 1865]). They were now interested in reading more on the Mutiny. Hooker wrote from Buxton, where he was convalescing (letter from J. D. Hooker, [26 September 1865]), that he had read Joseph Sheridan Le Fanu's *Uncle Silas*, which, from his description, was something of a thriller, and George Eliot's *The mill on the Floss*, which he was 'ravished' with: 'what a clever person the authoress is, I like it even better than Adam Bede'. He also read Hamilton Aïdé's *Carr of Carrlyon*, pronouncing it 'utter trash after G. Eliot'. Darwin replied (letter to J. D. Hooker, 27 [or 28 September 1865]): 'I did not enjoy "Mill on the Floss" so much as you, but from what you say we will read it again. Do you know Silas Marner: it is a charming little story.' The Darwins were also reading 'American novels', Miriam Coles Harris's *Rutledge*, and Laura Curtis Bullard's *Christine: or, woman's trials and triumphs*. In non-fiction, they had read or were reading William Lecky's *History of the rise and influence of the spirit of rationalism in Europe*, Edward Burnett Tylor's *Researches into the early history of mankind*, and William Gifford Palgrave's *Narrative of a year's journey through central and eastern Arabia*.

By the end of December, Darwin and Hooker's letters to each other are again full of botany and news of scientific society. Darwin finished the year well placed

to continue work on *Variation*, and with correspondents now ready to make observations for him in India (John Scott) and Brazil (Fritz Müller). Although not well enough to receive virtual strangers like Samuel Butler (letter to Julius von Haast, 26 December [1865]), Darwin was looking forward to a visit from Hooker (letter to J. D. Hooker, [31 December 1865]) and promising to explain about his '*so-called* hybrids of Lythrum' when they met. The last two months of the year also saw letters from George Henslow, the son of Darwin's mentor at Cambridge, John Stevens Henslow, from John Traherne Moggridge in Mentone, sending orchid specimens, from Frederick William Farrar, writing on language, and from Roland Trimen in Cape Town. His last letter of the year is a typical example of his energy and kindness. 'As for your thinking that you do not deserve the C[opley] Medal,' he rebuked Hooker, 'that I declare is mere insanity.—'

This volume also contains a supplement of 106 letters written or conjectured to have been written before 1865 that have been discovered or redated since the publication of the volumes they should have appeared in. It also contains letters that cannot be dated more precisely than to a span of years but that were probably written before 1865. It includes a small and remarkable collection of letters written by Darwin when he was 12 years old. Over half of the letters in the Supplement are from the period before the publication of *Origin*, including a number from the period after the *Beagle* voyage and before the move to Down, Kent, when Darwin was living in London. There are letters commenting on *Origin*, including two from Charles Lyell, who had been sent the proof-sheets before publication. Letters after 1859 throw light on Darwin's continuing researches and on the response to *Origin*, and there are letters to and from Darwin's children, giving a glimpse of a lively family atmosphere. However, Darwin wrote poignantly to his son William on 30 November [1861]: 'Mamma is in bed with bad Headach.— Miss. L. is very bad with headach.— Lenny has got a slight headach.— I am not very bright— The day is raining torrents, the children are ennuied—so I have not heart to write— GoodBye | My dear old man | C. Darwin.'

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