

Letter 3286 Darwin to J. D. Hooker

15 [Oct 1861]

Down Bromley Kent

15th

My dear Hooker

If your *Acropera* case shd. really turn out as you suspect, it would be very curious & would greatly interest me,—especially, as I chanced in another case to speculate on the possibility of such action. Unless wind by agitating slightly the flower would effect this, I shd. not believe in it. Wind is, necessary to self fertilisation of *Bee Ophrys*.—f1 I hope you will look to this. Try, if by any chance by pricking inside of *Labellum*, whether it be irritable.— How I shd. like to see one of the *Bulbophyllum* or other orchids with irritable *Labellum*!

I shall be particularly glad to see Acropera, as you kindly propose to send it. From analogy with *Epipactis palustris*, I shd. *Suspect* its use was to direct insects in & out of flower in a different direction.—f2

I have seen *Odontoglossum* & *Miltonia*: & as you say they have nothing remarkable; except indeed that in *Miltonia* the caudicle has not usual movements of depression. By the way the mechanism of this movement is rather curious & all lies in the bit of exterior membrane of *rostellum*, which is removed with gland. It is rather odd that I have not found one accurate or intelligible description of the so-called gland in *Ophreæ*, & still less in the *Vandææ*

Catasetum is too long a story, & would weary you, though it is a pleasure to me to write. You may rely that the ejection of pollinia is *special* contrivance; & the plant would never set a seed without it; for an insect could never remove pollinia without this action.f3 Mr Smith is very partially right about the kind of Elasticity.f4 The irritation which excites the rupture of *rostellum* (this rupturing is common to many Orchids) is transmitted along the curled horns, or as I think I shall call them the *antennæ*. The pollinia are ejected with sticky gland foremost & will surely stick on the head of insect, when it touches tips of the *antennæ*, which stand over, what seems to be the nectar-receptacle.—

Ever yours | C. Darwin

[HAND] You must let me send *Parslow* for a *Mormodes* when open.— I am very curious to see itf5

P.S. I have again changed my mind & shd. be *much obliged* for 2 or 3 **very young** buds of any of the *Vandææ* *Oncidium* wd be best: for I want to see whether the attachment of caudicle is effected in them as in *Spiranthes*: if you can send me buds, please do not send them for a week, when I shall have finished with Mr Sowerby & drawings.—f6

Could you lend me *Reichenbach*;f7 I shd be very glad to see it; if so please send it by enclosed address.—

You speak of pollen-masses of *Acropera* not sticking to stigma; this is often or generally the case if you pull straight out of stigma; but if you pull at right angles, as an insect could do in flying away, the elastic part of caudicle is stretched & drawn over the edge of stigmatic cavity, & (though so *wonderfully* strong in some cases) ruptures.

Most cordial thanks for all your kindness & writing so long a letter. I am glad to hear of your Arctic paper.f8

Your affect | C. D.

Endorsement: Endorsement: 'Oct 61'

Footnotes

f1 Hooker had apparently examined the parts of an *Acropera* flower at Kew and noted the unusual structure of the labellum (see letter to J. D. Hooker, 18 October [1861]). CD discussed *Acropera* in *Orchids*, stating: 'this genus for a long time remained the opprobrium of my work. All the parts seemed determinately contrived that the plant should never be fertilised.' (*Orchids*, p. 203).

f2 CD refers to the labellum of *Acropera* (see letter to J. D. Hooker, 18 October [1861]). In *Orchids*, he called this part 'an extraordinary organ, baffling description' and stated that the two upper petals served as 'lateral guides leading into the hood-like upper sepal' (*Orchids*, pp. 204–5).

f3 CD devoted an entire chapter in *Orchids* to a description of the mechanism by which the pollinia were ejected in *Catasetum*, which he called 'the most remarkable of all Orchids' (*Orchids*, pp. 211–48).

f4 John Smith was foreman and curator at the Royal Botanic Gardens, Kew (Allan 1967).

f5 These two sentences are written along the left margin of the page. Joseph Parslow was the butler at Down House.

f6 George Brettingham Sowerby Jr was preparing the illustrations for *Orchids* (see letter to W. E. Darwin, 12 October [1861]).

f7 Reichenbach 1852. See letter to J. D. Hooker, 18 October [1861].

f8 Hooker 1861.

Letter 3421 Darwin to J. D. Hooker

30 Jan [1862]

Down
Jan 30th

My dear Hooker

I received the *Bletia* this morning, rather dry from paper-Box.— I suppose that you are sure it is a *Bletia* for its pollen is very different from that of any of the *Epidendreae* which I have seen, & agrees with description of that of the *Arethuseae*. If it be a *Bletia*, by Jove, Lindley's grand divisions are not a little fanciful.^{f2} I shall be astounded if the distinction from state of pollen alone can make good main divisions.

I have not written since your note of Saturday, in which you offer to collect cases of Dimorphism:^{f3} I shd. not wish you to take trouble on purpose; but if you would make a note of any cases on which you stumble, I shd. be very glad. The cases of *Balsamineae*, *Violaceae* &c, I believe to be widely different from that of *Primula*.—

You allude to *Caryophyllaceae*; I shd. in this one instance like soon to hear to what you allude.—^{f4}

I have been very sorry to hear about Busk.—^{f5}

Bateman has just sent me a lot of orchids with the *Angraecum sesquipedale*: do you know its marvellous nectary 11½ inches long, with nectar only at the extremity. What a proboscis the moth that sucks it, must have! It is a very pretty case.^{f6}

Farewell | C. Darwin

Footnotes

^{f1} The year is established by the reference to George Busk's accident (see n. 5, below).

^{f2} John Lindley divided the *Orchidaceae* into seven tribes distinguished principally by the nature of the anthers and pollen-masses (Lindley 1853, p. 179). CD had expressed dissatisfaction with Lindley's classification system in his letter to J. D. Hooker, 18 [December 1861] (*Correspondence* vol. 9); he made similar comments in *Orchids*, p. 159. CD referred to the pollen-masses of *Bletia* in *Orchids*, p. 162 n.

^{f3} See letter to J. D. Hooker, 25 [and 26] January [1862], and letter from J. D. Hooker, [25 January 1862].

^{f4} For Hooker's reply, see the letter from J. D. Hooker, [31 January -- 8 February 1862].

^{f5} George Busk broke his arm on the evening of 20 January 1862 (see letters from J. D. Hooker, [25 January 1862], and from J. E. Gray, 29 January 1862).

^{f6} CD had already told Hooker about the box of orchids sent by James Bateman (see letter to J. D. Hooker, 25 [and 26] January [1862]). See also letter from Robert Bateman, [28 January 1862].

Letter 3662 Darwin to Asa Gray

23[–4] July [1862]

Down Bromley Kent

July 23d

My dear Gray

I received several days ago two large packets, but have as yet read only your letter;^{f2} for we have been in fearful distress & I could attend to nothing. Our poor Boy had the rare case of second rash & sore throat, besides mischief in kidneys; & as if this was not enough a most serious attack of erysipelas with typhoid symptoms.^{f3} I despaired of his life; but this evening he has eaten one mouthful & I think has passed the crisis. He has lived on Port-wine every 3/4 of an hour day & night. This evening to our astonishment he asked whether his stamps were safe & I told him of the one sent by you,^{f4} & that he shd. see it tomorrow. He answered “I should awfully like to see it now”; so with difficulty he opened his eyelids & glanced at it & with a sigh of satisfaction said “all right”.— Children are one’s gretest happiness, but often & often a still greter misery. A man of science ought to have none,—perhaps not a wife; for then there would be nothing in this wide world worth caring for & a man might (whether he would is another question) work away like a Trojan.— I hope in a few days to get my Brains in order & then I will pick out all your orchid letters (& read by & bye your last)^{f5} & return them in hopes of your making use of them—^{f6} *Planthanthera* would be eminently well worth giving & as much as feel safe about *Cypripedium*;^{f7} in part I am not sure that I understand the passages by which insects crawl in & out. Could you give a diagram?^{f8} I have such an arrear of letters & such a number of experiments,^{f9} all going to the dogs, that I have not time to make abstract of your letters. Will you return me such, as you do not use: but I hope you will be led to use all some time or another.—^{f10} I shall be very glad to hear of *Rosmacks**? observations on *Houstonia*; you only just alluded to them.—^{f11} You did formerly tell me about *Specularia*:^{f12} in *viola* & *oxalis* the case seems to me to be much too remarkable to be called “precocious flowering”.^{f13}

*I hope he will publish note; I hear the French say that my paper on *Primula* is all pure imagination; but I cannot hear that this is grounded on any observations—^{f14}

You will never read my horrid writing, if I write on both pages, of thin paper which I have taken in obedience to orders.—^{f15} Of all the carpenters for knocking the right nail on the head, you are the very best: no one else has perceived that my chief interest in my orchid book, has been that it was a “flank movement” on the enemy.^{f16} I live in such solitude that I hear nothing, & have no idea to what you allude about Bentham & the orchids & Species.^{f17} But I must enquire.—

By the way one of my chief enemies (the sole one who has annoyed me) namely Owen, I hear has been lecturing on Birds, & admits that all have descended from *one*, & advances as his own idea that the oceanic wingless Birds have lost their wings by gradual disuse.^{f18} He never alludes to me or only with bitter sneers & coupled with Buffon, & the Vestiges.—^{f19}

Well it has been an amusement to me this first evening scribbling as egotistically as usual about myself & my doings; so you must forgive me, as I know well your kind heart will do.— I have managed to skim the news-paper, but had not heart to read all the bloody details. Good God what will the end be; perhaps we are too despondent here; but I must think you are too hopeful on your side of the water. I never believed the “canard” of the army of the Potomac having capitulated.^{f20} My good dear wife & self are come to wish for Peace at any price.

Good Night my good friend. I will scribble no no more— C. D.

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One more word. I shd like to hear what you think about what I say in last Ch. of Orchid Book on the meaning & cause of the endless diversity of means for same general purpose.— It bears on design—that endless question—[f21](#)

Good Night Good Night.

P.S. Last night after writing the above, I read the great bundle of notes.[f22](#) Little did I think what I had to read. What admirable observations! You have distanced me on my own hobby-horse! I have not had for weeks such a glow of pleasure as your observations gave me.— *Plat. hyperborea* is indeed a most curious case & especially interesting to me. How like the *Bee ophrys*.[f23](#) Does it live in arctic regions where insects may be scarce? It would be *very good* to ascertain whether there actually is any occasional crossing, or removal of pollinia in this species.[f24](#) How curious about the nectary. See my *note* p. 324 about *Aceras*.[f25](#) *Aceras*, I now find, leads, also, most closely into the rare *O. hircina*.[f26](#) How organic beings are connected! How excellently you have worked *Cyp. spectabilis*. I daresay I may be altogether wrong, & fertilisation may always be by small insects bodily crawling in: I wish you could get some 2 youths to watch on warm day for 2 or 3 hours a fine plant of some *Cypripedium*.—[f27](#) What diversity in *Platanthera*— Your observations seem to me *much* too good to be sunk in any review of my Book; they won't be noticed.—[f28](#) But I am so very sorry I did not return your M.S. earlier: I shall be so grieved if I thus cause you inconvenience; but in truth it was physically impossible for me before last night to read or attend to anything.

Farewell my good Friend | C. Darwin

Footnotes

[f1](#) The year is established by the reference to Leonard Darwin's illness (see n. 3, below).

[f2](#) Gray had sent a 'great bundle of notes' with the letter from Asa Gray, 2–3 July 1862 (see n. 22, below); the envelope to that letter bears a London postmark: 'JY 18 | 62'.

[f3](#) Leonard Darwin had been sent home from school on 12 June 1862 suffering from scarlet fever; his recovery was interrupted by a recurrence of symptoms in July (see Emma Darwin's diary (DAR 242), and the letters to W. E. Darwin, 4 [July 1862], 9 July [1862], and [after 14 July 1862]).

[f4](#) Gray had sent a three-cent postage stamp in the letter from Asa Gray, 2–3 July 1862.

[f5](#) Letter from Asa Gray, 2–3 July 1862 (see n. 2, above).

[f6](#) Since starting to read *Orchids* in May, Gray had sent CD a number of notes on American species of orchids (see letters from Asa Gray, 18 May 1862, [2 June 1862], [late June 1862], and 2–3 July 1862). CD had urged Gray to publish his observations, either in reviewing *Orchids*, or separately, and had offered to return the notes to Gray to enable him to do so (see letters to Asa Gray, 10–20 June [1862], 1 July [1862], and 14 July [1862]). In the letter from Asa Gray, 2–3 July 1862, Gray asked CD to indicate those observations that seemed to him 'worth touching on', and to send back the appropriate notes.

[f7](#) Gray had expressed a wish to examine most of the species of *Cypripedium* further before publishing on the subject (letter from Asa Gray, 2–3 July 1862). He incorporated an account of American species of *Cypripedium* and *Platanthera* in the follow-up article to his review of *Orchids* (A. Gray 1862b), stating in regard to *Cypripedium* that it was a subject on which he would 'hazard a few remarks' (p. 427).

f8 In *Orchids*, pp. 274–5, CD had suggested that *Cypripedium* must be pollinated by an insect inserting its proboscis into one of the two lateral entrances at the base of the labellum, directly over one of the two lateral anthers, and thus either placing the pollen onto the flower’s own stigma, or carrying it away to another flower. In ‘Fertilization of orchids’, pp. 155–6 (*Collected papers* 2: 152), CD stated: Prof. Asa Gray, after examining several American species of *Cypripedium*, wrote to me ... that he was convinced that I was in error, and that the flowers are fertilized by small insects entering the labellum through the large opening on the upper surface, and crawling out by one of the two small orifices close to either anther and the stigma. Gray detailed his observations in A. Gray 1862b, but did not provide any illustrations, concluding: ‘The beauty of these adaptations can be appreciated only by actual inspection of the parts or of a series of figures.’

f9 On CD’s experiments, see, for instance, the letters to J. D. Hooker, 30 May [1862] and n. 7, and 23 June [1862] and n. 4, the letter to Alphonse de Candolle, 17 June [1862] and n. 2, and the letter to M. T. Masters, 8 July [1862] and n. 3.

f10 Gray’s notes to CD on American species of orchids have not been found in the Darwin Archive–CUL, or in the Gray Herbarium Archives.

f11 ‘Rosmack’ is a misspelling; Joseph Trimble Rothrock was a student of Gray’s (see letter from Asa Gray, 2–3 July 1862). Gray forwarded Rothrock’s observations on *Houstonia* in the letter from Asa Gray, 4 August 1862.

f12 See letter from Asa Gray, 2–3 July 1862, and *Correspondence* vol. 9, letter from Asa Gray, 11 October 1861.

f13 See letter from Asa Gray, 2–3 July 1862.

f14 The reference has not been traced.

f15 Gray advised CD to use thinner writing paper, thereby reducing postage charges, in the letter from Asa Gray, 2–3 July 1862.

f16 See letter from Asa Gray, 2–3 July 1862.

f17 See letter from Asa Gray, 2–3 July 1862 and n. 16. The reference is to George Bentham’s presidential address to the anniversary meeting of the Linnean Society of London on 24 May 1862 (Bentham 1862).

f18 CD probably refers to Richard Owen’s lectures at the Museum of Practical Geology on the ‘Characters, Organisation, Geographical Distribution, and Geological Relations of Birds’. The series of six lectures ran from 14 to 30 May 1862 (*Athenæum*, 10 May 1862, p. 613). Neither the printed accounts of these lectures, nor the manuscript text which survives for some of them, report the details cited by CD (see letter to Armand de Quatrefages, 11 July [1862], n. 7). However, CD apparently learned of the content of the lectures from one of his acquaintances (see letter to Charles Lyell, 22 August [1862] and n. 7).

f19 CD refers to the evolutionary views of George Louis Leclerc, comte de Buffon (see letter from Armand de Quatrefages, [after 11 July 1862], n. 5) and to the anonymous evolutionary work, *Vestiges of the natural history of creation* ([Chambers] 1844). Owen discussed CD’s theory in common with the views of Buffon and Robert Chambers in R. Owen 1861a, pp. 442–3. See also R. Owen 1862a. In his fifth lecture, on the geographical distribution of birds (Natural History Museum, London, OC38.3/318; see

also *Medical Times and Gazette* (1862), pt 1: 617), Owen stated: we must remember that by the word 'creation' we mean "a process we know not what." We have not yet ascertained the secondary causes which operated when "the earth brought forth grass & herb yielding seed after its kind" and when "the waters brought forth abundantly the moving creature that hath life." And if the 'spontaneous generation' of a fruitbearing tree, or of a fish, were conceivable, & the whole process demonstrable, we should still retain as strongly the idea which is the chief of the 'mode' or group of ideas called 'creation'; viz., that the process was ordained by and had originated from an... all-wise First Cause of all things. On Owen's views concerning evolution, see Rupke 1994, pp. 220–58.

f20 The reference is to the failed attempt made by the Union army of the Potomac in June 1862 to seize the Confederate capital, Richmond, Virginia. Between 25 June and 1 July 1862 the Confederates drove the Union forces away from Richmond; the ensuing battles, resulting in 30,000 casualties, were the bloodiest yet seen in the conflict (McPherson 1988, pp. 461–71).

f21 In chapter 7 of *Orchids*, pp. 348–9, CD stated: In my examination of Orchids, hardly any fact has so much struck me as the endless diversity of structure,—the prodigality of resources,—for gaining the very same end, namely, the fertilisation of one flower by the pollen of another. The fact to a certain extent is intelligible on the principle of natural selection. Gray and CD had corresponded at length on the question of design in nature (see *Correspondence* vols. 8 and 9). For Gray's response to CD's question, see the letter from Asa Gray, 22 September 1862 and n. 11.

f22 CD refers to the notes on orchids sent with the letter from Asa Gray, 2–3 July 1862 (see n. 2, above, and the letter from Asa Gray, 15 July [1862] and n. 6); the notes have not been found.

f23 Gray's notes on this subject have not been found; however, in the portion of A. Gray 1862c that was published in the September number of the *American Journal of Science and Arts*, Gray disputed Joseph Dalton Hooker's claim that *Platanthera hyperborea* and *P. dilatata* constituted a single species, reporting that he had recently observed that 'while *P. dilatata* ... can rarely if ever self-fertilise, *P. hyperborea* readily does so, much in the manner of *Ophrys apifera* as recently illustrated by Darwin' (p. 259). (Gray gave further details of pollination in *P. hyperborea* in the follow-up article to his review of *Orchids* (A. Gray 1862b, p. 426).) In *Orchids*, pp. 72–3, CD similarly distinguished *Ophrys arachnites* as a species separate from *O. apifera* (the bee ophrys) on the basis that the former was adapted for cross-fertilisation, while the latter was adapted for self-fertilisation. One of CD's objectives in *Orchids* was to demonstrate that cross-fertilisation was the 'main object' of the contrivances by which orchids were pollinated (p. 1), and in the conclusion, he noted that the bee ophrys was anomalous in being adapted for self-fertilisation (p. 359). He had subsequently been speculating about possible explanations for this apparent anomaly (see letters from G. C. Oxenden, [before 30 May 1862], 21 June 1862, and 8 July 1862, and letter to A. G. More, 7 June [1862]).

f24 In A. Gray 1862b, p. 426, Gray described how it would be possible for an insect to cross-pollinate *P. hyperborea*, continuing: If the rule holds here as elsewhere, that a stigma is more sensitive to the pollen of another flower than to that of its own, there will be no lack of sufficient crossing in this species, wherever proper insects abound; where they do not, it will be prolific without them.

f25 Gray did not mention the nectary of *P. hyperborea* in either of his published accounts (A. Gray 1862b and 1862c). CD's account of the monstrous flowers of *Aceras* in *Orchids*, p. 324 n., referred to the pollinia not having viscid discs, and to the two anther cells being widely separated; this resembles Gray's statement that *P. hyperborea* had smaller viscid discs than *P. dilatata*, with the anther-cells more divergent, and the stalks of the pollinia being 'very attenuated and weak' (A. Gray 1862c, p. 260).

f26 CD had recently received specimens of *Orchis hircina* from George Chichester Oxenden (see letter from G. C. Oxenden, 4 June [1862] and n. 2). See also *Orchids* 2d ed., pp. 25–6.

f27 See n. 8, above. In his account of insect pollination in *Cypripedium* (A. Gray 1862b, p. 428), Gray stated that CD's theory might account for fertilisation in the genus, 'but hardly in *C. spectabile*'. He went on to note that the 'rigid, sharp-pointed papillæ, all directed forwards', that were particularly striking on the stigma of *C. spectabile*, offered 'no slight confirmation' of his own hypothesis, since they would act like a 'wool-card' in removing pollen from any insect 'working its way upwards to the base of the labellum'. However, Gray noted with respect to his hypothesis that he had 'not been able to detect insects actually at work'.

f28 Gray's observations on American species of *Platanthera* and *Cypripedium* were incorporated into the follow-up article to his review of *Orchids* (A. Gray 1862b).

Letter 5637 A. R. Wallace to Darwin

1 Oct [1867]

761/2, Westbourne Grove | Bayswater. W.
Octr. 1st.

Dear Darwin

I am sorry I was not in town when your note came.^{f2} I took a short trip in Scotland after the Brit. Ass. Meeting; and went up Ben Lawers. It was very cold and wet and I could not find a companion or I should have gone as far as Glen Roy.^{f3}

My article on "*Creation by Law*" in reply to the Duke of Argyle and the North British Reviewer, is in the present month's Number of the "Quarterly Journal of Science".^{f4} I cannot send you a copy because they do not allow separate copies to be printed. There is a nice illustration of the *predicted* Madagascar Moth and *Angræcum sesquipedale*.^{f5}

I shall be glad to know whether I have done it satisfactorily to you, and hope you will not be so very sparing of criticism as you usually are.

I hope you are getting on well with your great book. I hear a rumour that we are to have *one* vol. of it about 'Xmas.^{f6}

I quite forget whether I told you that I have a little boy, now three months old, and have named him "Herbert Spencer", —(having had a brother Herbert).^{f7} I am now staying chiefly in the country at Hurstpierpoint but come up to town once a month at least. You may address simply Hurstpierpoint *Sussex*.^{f8}

Hoping your health is tolerable & that all your family are well |
Believe me Dear Darwin | Yours very faithfully | Alfred
R. Wallace—

Charles Darwin Esq.

Footnotes

^{f1} The year is established by the reference to Wallace's article in the *Quarterly Journal of Science* (A. R. Wallace 1867c).

^{f2} CD's letter has not been found, but he was in London from 18 to 24 September 1867 (see 'Journal' (*Correspondence* vol. 15, Appendix II)).

^{f3} Wallace refers to the annual meeting of the British Association for the Advancement of Science, which was held in Dundee from 4 to 11 September 1867 (*Report of the thirtyseventh meeting of the British Association for the Advancement of Science held at Dundee*). Ben Lawers is a mountain just north of Loch Tay, Perthshire. Glen Roy is in the district of Lochaber, southern Inverness-shire. CD visited Glen Roy in June 1838 and in 1839 published 'Parallel roads of Glen Roy', in which he presented a theory of the marine origin of the 'roads' (for more on CD and Glen Roy, see *Correspondence* vol. 2 and *Correspondence* vol. 9, Appendix IX; see also Rudwick 1974).

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f4 George Douglas Campbell, the eighth duke of Argyll, had published *The reign of law*, a book critical of CD's transmutation theory, in 1867 (G. D. Campbell 1867); the *North British Review* had published an anonymous article by Henry Charles Fleeming Jenkin, also critical of CD's theory, in June 1867 ([Jenkin] 1867). Wallace responded to these criticisms in his article 'Creation by law' in the *Quarterly Journal of Science* (A. R. Wallace 1867c).

f5 The illustration referred to is in A. R. Wallace 1867c, facing p. 471; see also the frontispiece to this volume. CD received a specimen of *Angraecum sesquipedale* in January 1862 and was astounded by the length of its nectary (see *Correspondence* vol. 10, letter to J. D. Hooker, 25 [and 26] January [1862]). In *Orchids*, p. 198, CD concluded: 'in Madagascar there must be moths with probosces capable of extension to a length of between ten and eleven inches!' The illustration in A. R. Wallace 1867c is an artist's rendition of the moth CD had predicted. The predicted moth, *Xanthopan morgani praedicta*, eventually discovered in 1903, was a subspecies of a moth mentioned by Wallace in his article (*Macrosila morganii*, now *Xanthopan morgani*; see A. R. Wallace 1867, p. 477; see also Kritsky 1991).

f6 Wallace refers to *Variation*; both volumes appeared at the end of January 1868 (Freeman 1977).

f7 Wallace's son was born on 22 June 1867 (Raby 2001, p. 194). Wallace's brother, Herbert Edward Wallace, had died of yellow fever in Brazil in 1851 (*ibid.*, p. 76).

f8 While in Hurstpierpoint Wallace stayed at the home of his father-in-law, William Mitten (Raby 2001, p. 194).

f9 CD's annotations are notes for his reply to Wallace (see letter to A. R. Wallace, 12 and 13 October [1867] and nn. 14 and 20).