

of Works there, and is come over to give information to Government about the state of the people, and the means of applying the intended relief, called for by the failure of the potato crop. He has been engaged in the same work since last autumn. He told me that the disease is universal throughout Ireland, that *last* year there was a very large crop, that about one half was lost for human food, but as a part was food for pigs, on which they fattened, it may be said that the total lost did not exceed one-third of an unusually large crop. But this year matters are much worse: in the first place, not half the usual quantity was planted, and it is not expected that more than one-fourth of that half quantity will be fit for food to man or beast, and even that fourth to be saved must be consumed immediately. He says that from the measures Government have taken, he is not afraid of there being sufficient supply of Indian corn to make up the deficiency, but there is the greatest possible difficulty to give the relief, and not do mischief by giving encouragement to the idle habits of the people. Much harm has been already done by the relief that was afforded since last autumn. He says that there are at least two millions of people who have been in the habit of subsisting entirely on potatoes.

The appointments by the Government have given satisfaction, but he says that Ireland never will be without agitation until the Catholic priests are paid by Government, and I believe he is right.

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*From Mr. Charles Darwin.*

Down, Farnborough, Kent, *August 10th, 1846.*

MY DEAR MR. HORNER,—In following your suggestion in drawing out something about Glen Roy for the Geological Committee, I have been completely puzzled how to do it. I have written down what I should *say*, if I had to meet the head of the Survey, and wished to persuade him to undertake

the task; but as I have written it, it is too long and ill expressed, seems as if it came from nobody and was going to nobody, and therefore I send it to you in despair, and beg you to turn the subject in your mind. I feel a conviction if it goes through the Geological part of Ordinance Survey, it will be swamped, and as it is a case for more accurate measurements, it might, I think, without offence, go to the head of the real Surveyors. If Agassiz or Buckland are on the Committee they will sneer at the whole thing and declare the beaches are those of a glacier lake, than which I am sure I could convince you that there never was a more futile theory.

I look forward to Southampton with much interest, and hope to hear to-morrow that the lodgings are secured to us.

You cannot think how thoroughly I enjoyed our Geological talks, and the pleasure of seeing Mrs. Horner and yourself here.

Ever your obliged,

CHARLES DARWIN.

division among those geologists present who understand the subject, I suspect that the learned Professor would have gone forth alone, notwithstanding his eloquence and his long established authority.

My kindest love to Frances.

Yours affectionately,

LEONARD HORNER.

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*From Mr. Charles Darwin.*

Down, Farnborough, Kent, 1846.

MY DEAR MR. HORNER.—I am truly pleased at your approval of my book, and it was very kind of you taking the trouble to tell me so. I long hesitated whether I would publish it or not, and now that I have done so at a good cost of trouble, it is indeed highly satisfactory to think that my labour has not been quite thrown away.

I entirely acquiesce in your criticism on my calling the Pampean formation "recent"; pleistocene would have been far better. I object, however, altogether on principle (whether I have always followed my principle is another question) to designate any epoch after man. It breaks through all principles of classification to take one Mammifer as an epoch. And this is presupposing we know something of the introduction of man: how few years ago, all beds earlier than the pleistocene were characterized as being before the monkey epoch. It appears to me that it may often be convenient to speak of an Historical or Human deposit in the same way as we speak of an Elephant bed, but that to apply it to an epoch is unsound.

I have expressed myself very ill, and I am not very sure that my notions are very clear on this subject, except that I

know that I have often been made wrath (even by Lyell), at the confidence with which people speak of the introduction of man, as if they had seen him walk on the stage, and as if in a geologico-chronological sense it was more important than the entry of any other Mammifer.

You ask me to do a most puzzling thing, to point out what is newest in my volume, and I found myself incapable of doing almost the same for Lyell. My mind goes from point to point without deciding; what has interested oneself or given most trouble is, perhaps, quite falsely thought newest. The elevation of the land is perhaps more carefully treated than any other subject, but it cannot, of course, be called new. I have made out a sort of index, which will not take you a couple of minutes to skim over, and then you will perhaps judge what seems newest. The summary at the end of the book would also serve the same purpose.

I do not know where Elie de Beaumont has lately put forth on the recent elevation of the Cordillera. He "rapported" favourably on d'Orbigny, who in late times fires off a most royal salute, every volcano bursting forth in the Andes at the same time with their elevation; the debacle thus caused, depositing all the Pampean mud and all the Patagonian shingle! Is not this making Geology nice and simple for beginners?

With many thanks, most truly yours,

CHARLES DARWIN.

P.S.—I am astonished that you should have had the courage to go through my book. It is quite obvious that most geologists find it far easier to write than to read a book.

Chapter I. and II. *Elevation of the land*, equability on East coast, as shown by terrace, page 19; length on West coast,

page 53 ; height at Valparaiso, page 32 ; number of periods of rest at Coquimbo, page 49 ; elevation within human period near Lima greater than elsewhere observed, the discussion, page 41 ; on more horizontality of terraces, perhaps one of the newest features ; on formation of terraces rather newish.

Chapter III., page 62. Argument of horizontal elevation of Cordillera, I believe new. I think the connection (page 54), between earthquake starts and insensible rising, important.

of Commerce, with whom Cobden has had to carry on the negotiations about the commercial treaty. He says that no one could have conducted himself with more perfect fairness and straightforward honesty, and it has been completed upon very equitable terms for both countries. He, Louis, is full of admiration of Cobden. There will be discontents in both countries for some time among those whose *immediate* gains the treaty cannot fail to encroach upon, but the principle of free trade is so sound, that before long the beneficial effects of the treaty will be substantially felt, and it will render war between the two countries year after year more improbable. The visit of the Empress to Scotland is a curious affair, *it is said*, that she is a very great fanatic, and a devoted worshipper of the Pope, and that her husband has encouraged the trip in order not to be bored with her importunities while he is arranging matters for curtailing the temporal power of his Holiness. She has been warmly received in all places she has yet visited.

I am very well, and am careful to bear in mind that I am on the verge of seventy-six.

My kindest regards to George, and kisses to the three darlings.

I am ever, my dearest Leonora's

Affectionate father,

LEONARD HORNER.

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*From Mr. Charles Darwin.*

Down, Bromley, Kent, *December 23rd, 1860.*

MY DEAR MR. HORNER,—I must have the pleasure of thanking you for your extremely kind letter. I am very much pleased that you approve of my book,\* and that you are going to pay me the extraordinary compliment of reading

\* Origin of Species.

it twice. I fear that it is tough reading; but it is beyond my powers to make the subject clearer. Lyell would have done it admirably.

You must enjoy being a gentleman at your ease; and I hear that you have returned with ardour to work at the Geological Society. We hope in the course of the winter to persuade Mrs. Horner and yourself and daughters to pay us a visit.

Ickly did me extraordinary good during the latter part of my stay, and during my first week at home; but I have gone back latterly to my bad ways, and fear I shall never be decently well and strong.

With many thanks for your very kind letter, pray believe me, my dear Mr. Horner,

Yours very sincerely,

CHARLES DARWIN.

P.S.—When any of your party write to Mildenhall I should be much obliged if you would say to Bunbury that I hope he will not forget, whenever he reads my book, his promise to let me know what he thinks about it; for his knowledge is so great and accurate, that every one must value his opinion highly. I shall be quite contented if his belief in the immutability of species is at all staggered.

## CHAPTER XIII.

1861.

*From Charles Darwin.*Down, Bromley, Kent, *February 14th, 1861.*

MY DEAR MR. HORNER,—I must just thank you for your note, but I will take advantage of your kind and considerate offer of discussing the points referred to, till we meet. The latter point seems to me very intricate, and I have often thought it over.

Man does not cause any variations, he only accumulates any which occur ; I do not suppose that God intentionally gave to parent Rock Pigeon a tendency to vary in size of crop, so that man by selecting such variations should make a Pouter, so under nature, I believe variations arise, as we must call them in our ignorance, accidentally or spontaneously, and these are naturally selected or preserved from being beneficial to the successive individual animals in their struggles for life. I know not whether I make myself clear.

Believe me, my dear Mr. Horner,

Yours very sincerely,

CHARLES DARWIN.

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*From Charles Darwin.*Down, Bromley, Kent, *March 20th, 1861.*

MY DEAR MR. HORNER,—I am very much obliged for your Address, which has interested me much. I have been particularly glad to see your excellent summary on metamorphism, for I was very ignorant of the recent researches. I thought that I had read up pretty well on antiquity of man,



but you bring all the facts so well together in a condensed form, that the case seems much clearer to me. How curious about the Bible! I declare I had fancied that the date was somehow in the Bible. You are coming out in a new light as a Biblical critic! I must thank you for your remarks on the origin of species (though I suppose it is almost as incorrect to do so, as to thank a judge for a favourable verdict), what you have said has pleased me extremely.

I am the more pleased as I would rather have been well attacked, than have been handled in the namby-pamby-old-woman style of the cautious Oxford professors.

I most sincerely hope that Mrs. Horner is a little better; and with my kindest remembrance to all your party, pray believe me, my dear Mr. Horner,

Your sincerely obliged,

CHARLES DARWIN.

Emma sends her very kind remembrances.