

MY DEAR HOOKER

Transcriptions of letters from James Hector to
Joseph Dalton Hooker between 1860 and 1898

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Introduction

Joseph Hooker (1817-1911) and James Hector (1834-1907) corresponded from opposite sides of the world for almost forty years, and their correspondence gives a unique, personal view of 19th century scientific developments in Great Britain and in New Zealand. Hooker was Director of Kew Gardens and later President of the Royal Society of London, while Hector was Director of the New Zealand Geological Survey and the Colonial Museum (predecessor of the Museum of New Zealand Te Papa Tongarewa). They were leading figures in their own scientific communities, concerned with changing ideas and institutions, and they gossiped about personalities and current issues. They regularly exchanged seeds and plants as well as scientific curiosities and items for display.

So far 91 letters from Hooker have been identified as well as 165 letters from Hector (not including short, formal letters, dispatching or acknowledging the receipt of plants or other items). The letters from Hooker were transcribed and published by Yaldwyn and Hobbs (1998). They stated that, “Hector’s writing is more difficult to read than Hooker’s; some parts of these letters are indeed unreadable and, as Hector’s style is less interesting than Hooker’s, no attempt was made to transcribe and include the text of Hector’s side of the exchange...”. Notwithstanding these difficulties, we felt that the Hector letters needed to be transcribed as part of a biographical study of James Hector, and this was done over a 5 month period from October 2011 to March 2012.

Rowan Burns is responsible for the primary transcriptions, but both authors checked and discussed every letter. Additional assistance was sought from colleagues, especially for the identification and spelling of biological names. Although Hector’s writing is certainly difficult to read, most of his letters can be decoded by working through them slowly and carefully. But as Hooker was a busy scientist and administrator, we have to wonder if he was always able to interpret the details of what Hector had written to him.

Background

Yaldwyn and Hobbs (1998, pp. 3-17) give considerable biographical information on Hooker and Hector, and this is not repeated here. For those seeking detailed information, the most effective way of understanding the correspondence is to have both this volume and Yaldwyn and Hobbs’ compilation open on the desk together. But for those using only this compilation, a brief chronology is given in Table 1, and biographies are available online from the Dictionary of New Zealand Biography:

Hector: <http://www.teara.govt.nz/en/biographies/1h15/1>

Hooker: <http://www.teara.govt.nz/en/biographies/1h33/1>



Figure 1: Map of New Zealand showing major towns in the late 19th century as well as localities mentioned in letters from Hector to Hooker

A locality map, showing the main towns and places mentioned by Hector is given in Figure 1. Because Hooker had visited New Zealand in 1841, Hector assumed that he was familiar with local geography.

Hector was 17 years younger than Hooker, whom he regarded as a mentor. Hooker was able to keep him in touch with the latest scientific ideas in England as well as being the first port of call for advice or favours. But Hooker also had a lot to gain from the correspondence because Hector sent him plants and seeds (mainly collected by his botanist, John Buchanan) as well as supplying him with information about New Zealand. Hooker regularly sent extracts from Hector's letters to the newly established scientific journal, *Nature*, whose readers were thus kept up to date with antipodean news ranging from debates about the extinction of the moa to descriptions of volcanic eruptions from Mounts Tongariro and Tarawera.

In late 1868 Hooker sent his eldest son, William (Willie), on an extended trip to New Zealand under Hector's care. Aged 16, Willie had health problems and no inclination for intellectual matters, and his father wondered if he might settle in New Zealand. Hector supervised him for 18 months, and then arranged for him to return to England in early 1870. Willie's letters have been transcribed by Yaldwyn and Hobbs (1998, pp. 202-236), and give an interesting view of life in New Zealand through the eyes of a young man. Twenty years later Hooker sought Hector's assistance for his son Brian, a geologist/mining engineer, who spent some time in New Zealand.

The Hector letters

All but two of the letters are held in the Archives of the Royal Botanic Gardens, Kew, UK. The exceptions are two incomplete letters (dated 9-7-1862 and 19-7-1878) that were never sent to Hooker, and are held in the Te Papa archives. The Kew letters were sorted and catalogued by Lady Hyacinth Hooker, second wife of Sir Joseph Hooker. Unfortunately the photographs that Hector records having sent to Hooker became separated from the letters, and most have not been relocated.

The Kew letters were microfilmed as part of the Australian Joint Copying Project (AJCP), and a copy of the microfilm is held in the Alexander Turnbull Library (Micro-Ms-Coll-10). Most of the letters are catalogued as part of the Director's Correspondence (DC) series, mainly in volume 174, but a few are filed elsewhere. Each transcription has the Kew file number as well as a microfilm number. A set of prints made from the microfilm are held in the Te Papa archives (MU000285/001/0001), and these were used as the main source for transcriptions. As the project progressed, it became clear that microfilming had often clipped out marginal notes, some copies were difficult to read, and a few pages were muddled. We obtained new digital scans from the Kew archives for 45 of the letters, and this enabled many of the problems to be resolved.

We present the Hector to Hooker letters in date order with the individual letters serially numbered starting with Hector's letter of 31 August 1860, before he had any idea of coming to New Zealand. There is a gap in the letters of about seven years, between 11 September 1886 and 7 February 1894, soon after Hooker retired from the directorship of Kew Gardens. There is evidence that some letters were written during this period, and it is hoped that these may still come to light.

1860 Hooker, aged 43, is in his fifth year as Assistant Director, Royal Botanic Gardens, Kew. Hector, aged 26, has recently returned from the Palliser expedition to western Canada, and is writing up the final report.	1874 Hooker's first wife, Frances, dies.
1861 Hector appointed geologist to Otago Province, and departs for Dunedin in January 1862.	1875 James and Georgiana Hector sail for the UK.
1862-63 Hector explores Otago	1876 The Hectors return to New Zealand. Hooker marries Hyacinth Jardine.
1864 Hooker publishes first part of his <i>Handbook of the New Zealand Flora</i> Hector appointed Commissioner for the New Zealand Exhibition in Dunedin	1877 Hooker knighted (KCSI) Hector visits Australia
1865 Hooker's father, Sir William Hooker dies; Joseph Hooker appointed Director of Royal Botanic Gardens, Kew. Hector appointed Director of NZ Geological Survey and Colonial Museum.	1878 Hooker retires as President of the Royal Society
1866 Hector elected FRS	1882 Hector and family move to <i>Ratanui</i> on the western Hutt hills
1867 Hector appointed Manager of the New Zealand Institute	1885 Hooker retires from Kew, and moves to <i>The Camp</i> near Ascot
1868 Hooker's son Willie sent to New Zealand for the sake of his health Hector marries Georgiana Monro	1886 Hector appointed Chancellor of the University of New Zealand
1869 Hector's first child, Barclay, is born	1887 Hector knighted (KCMG)
1870 Willie Hooker returns to England	1892 Hector loses control of the Geological Survey
1873 Hooker elected President of the Royal Society	1893 Hooker's son Brian visits Hector in New Zealand
	1903 Hector retires
	1907 Hector dies
	1911 Hooker dies

Table 1: Comparative chronology of James Hector and Joseph Hooker during the years that they corresponded (1860-1898)

Partial or complete transcriptions of some of the letters have already been made by Tony Hocken and by Yaldwyn and Hobbs (1998), and these have been incorporated into the compilation that follows although in all cases we have checked the original letters.

We have generally followed the style and conventions adopted by Yaldwyn and Hobbs (1998, p. 9). Hector's spelling, punctuation, abbreviations and capitalisation have been retained as they appear in the original letters, although a few full stops have been added where they were obviously intended. Hector's underlining has been retained, except for biological names and for ships, both of which are given in italics. Words that cannot be read, but for which a reasonable interpretation is suggested by the context are indicated by a question mark set in square brackets. Words that cannot be read at all are indicated by dashes.

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Finally, we would like to acknowledge the work of Lady Hyacinth Hooker who protected, sorted and catalogued the huge correspondence of the Hooker family. It is due to her efforts that the letters from James Hector to Joseph Hooker have been preserved and are still accessible today.

Reference

Yaldwyn, J.; Hobbs, J. 1998: My Dear Hector: Letters from Joseph Dalton Hooker to James Hector, 1862-1893. *Museum of New Zealand Te Papa Tongarewa Technical Report 31*, 292 pages.

SUMMARIES OF THE LETTERS

1. Hector to Hooker, 31 August 1860

Hooker's holiday and recruitment – Sullivan to procure Hooker an Aneroid – Hector's endorsement of Cleland – Dickson encouraged to take an appointment and gain use of the Kew collections – Hooker's liberal Botany – comments on Balfour's work – Hooker's rousing letter to Balfour – request to have Dickson's Thesis published.

2. Hector to Hooker, [Undated A]

A Religious View joke – Hooker should be pleased with Dickson's Thesis – Hooker's trust in Hector's judgement – Hooker's "crusade" in the Holy Land.

3. Hector to Hooker, [Undated B]

Times slip regarding the Nova Scotia Gold diggings – Hector starting for Scotland – Hector broke with Windham and closed with the N.Z. colonists on Murchison's advice – Hector thanks Hooker for Kirk's interesting letters.

4. Hector to Hooker, [Undated C]

Hector's Scotland address – North Berwick is beautiful, but has had little rain – Hooker's letter to Balfour regarding Dickson – the California Photographs came out well and will be sent to Sir William – Hector to look for "wrinkles" in the Edinburgh Botanic Garden – will be South again by mid-September.

5. Hector to Hooker, 22 October 1861

Otago plans almost complete – Hector's assistant to take equipment to Otago in December while Hector travels overland and visits the Australian Gold diggings – Hector procuring equipment in Edinburgh, will not return to London until November – will abandon the idea of a Lecture for the Royal Institution – asks Hooker for a spare proof of Arctic paper tabulations – has written to Reeks about Charles S. Wood, school of mines.

6. Hector to Hooker, 27 December 1861

Hector starts for London – thanks for the report by Haast – Otago contract signed – difficulty procuring pocket sextants.

7. Hector to Hooker, 20 February 1862

In Marseilles with Palliser – Cairo: comments on the desert, railway, and the possibility of a canal across the isthmus – delivered Hooker's note to Thwaites in Ceylon – Major Skinner plans a trip for Hector through the jungle – comments on vegetation and Geology – chemical versus mechanical action – no Quartz thus no hope of Gold – decomposition of metamorphic rocks is new to Hector on a large scale – Bryson's pressure theory – Wardian Case to England – Thwaites is strong for Darwin, will hopefully emphasise this in his *Flora of Ceylon* – fireflies and lizards from Thwaites for Australian acclimatisation society – a note for Huxley about fish.

8. Hector to Hooker, 9 July 1862 [Draft]

Arrived Dunedin April – spent a pleasant and profitable month in examining the Gold Fields in Melbourne with Selwyn – did not see much of Dr. Muller, but enjoyed his gardens and greenhouses – Dr. Muller's observations on distribution of species in Australia – equipment arrived at Dunedin two days before Hector – assistant Wood arrived on 5th of June – Provincial Government amenable to Hector's wants – have built him an office, museum store and laboratory.

9. Hector to Hooker, 9 September 1862

Demand for *Flora Zelandiae* – importance of making Botanical Collections – Buchanan's engagement on Hooker's recommendation – hope to go with Buchanan to West Coast in December – Otago is nearly treeless – comments on geography – diagram of wooded districts – encloses report to Government, asks for Hooker's help – encloses Gold Fields letter – Hector divided by work in town and travelling – Wood arrived in bad health, left for Australia – office built and staff employed – Otago coal and the Mesozoic Carboniferous period – hopefully enclose map of the Province.

10. Hector to Hooker, 27 March 1863

Encloses Alpine plants – summers' gatherings to be sent home soon – Hector only in town for five days, to start back for the mountains tomorrow – will try to get Hooker a map.

11. Hector to Hooker, 11 May 1863

Hector's plans for Botany please Hooker – this season harder than last for gathering Alpines, but a number of novelties have arrived – a set of dried plants and seeds with field notes and drawings by Buchanan to be sent to Hooker, with a duplicate set kept for the Provincial Museum – unique items will go to Hooker – starting for the West Coast with Buchanan, details of plans – hope to clear up some curious points in Otago's Tertiary Geology, but not much hope for Botany.

12. Hector to Hooker, 15 October 1863

Away for five months – have not made many collections due to winter but return soon with Buchanan to do so – a new and exciting pass – headed for Dusky Bay – notes on Glacial valley formation – corroborates Lyell's new book with Hector's observations – back in Dunedin by end of year – Gold Fields – NZ Industrial Exhibition 1865; will attempt to secure spoils for Hooker.

13. Hector to Hooker, 16 January 1864

Return from eight-month expedition – examining Sounds since October mail – little Geological novelty, devoted to Botany – disappointed with West Coast flora, compare East – will send requested drawings of *Cordyline australis*, museum set of Otago woods – building Botanic reserve – *Ranunculus* – busy with survey, museum, Exhibition and acclimatization society.

14. Hector to Hooker, 16 February 1864

Buchanan's notes on West Coast plants, hopefully in time for publication of Hooker's book – NZ Exhibition: complementary Essays to be composed, one on Economic Botany – notes on letter to Owen, of which Hector has heard nothing.

15. Hector to Hooker, 18[?] March 1864

West Coast mosses – Hector writing a report of his activities for the Provincial Council – photographs of fossil plants – received back issues of the Geological Journal, comments on Tertiary erosion.

16. Hector to Hooker, 18 April 1864

Mosses enclosed, seeds and woods forthcoming – Dr. Monroe writing on Botany of Middle Island, Colenso on North Island – Hector divided NZ into five districts and four altitude zones – nomenclature and comparison of species difficult without Hooker's book – Nat. Hist. Review and acclimatization – introduced plants taking over cut up earth on tracks to Gold Fields – comments on Haast's fly theories – carrion Hawk – Kakapo and Kiwi bones to Sclater – Brown Coals – requests books on transport and acclimatization of plants and animals – Sullivan's behaviour.

17. Hector to Hooker, 17 May 1864

List of East and West Coast flora – NZ Exhibition Essays: Haast, Crawford and Hector writing on Geology – *Areca* plant distribution – notes on *Cordylines* – query about *Astelia* – about to depart on a six week tour of the other Provinces to grandstand for NZ Exhibition – to visit Nelson Gold diggings – enclose map of Province – Herbarium work – In confidence: General Government to engage Hector as Colonial Geologist.

18. Hector to Hooker, 17 June 1864

Wandering about NZ – struck with Botanical differences between North and South – Gold discoveries stirring the North – Tertiary basins – the Native War engrosses all.

19. Hector to Hooker, 15 July 1864

Areca sapida does not occur in Otago – Munroe's thoughts on Nelson *Cordyline* – Hector has enjoyed his tour and met with Dr. Knight, Colenso, Travers and Haast for the first time, gives opinions of them – Haast showed Hector proof sheets of Hooker's *Flora*; it is excellent – relation of Great Lakes to Sounds of the West Coast – Hector's hopes for a permanent Geological Survey – observations of shells – return to Otago – after travelling whole of NZ, thinks South Island will be the greater Colony.

20. Hector to Hooker, 14 August 1864

Encloses rare fern – can learn nothing of Antipodes Is. – specimens from Chatham Is. – last great continental state of the Southern Hemisphere – NZ Southern Mountains and faultings – several months until transfer to Geological Survey of New Zealand – currently on the South Coast, preparing an expedition into unknown country.

21. Hector to Hooker, 17 October 1864

Exploring SE Coast for two months, have nothing to send Hooker – *Weinmannia* – asks Hooker for S. Hemisphere Essay or Fossil Flora Essay – requests news of the Glacier debate – Exhibition building complete, to open in two months.

22. Hector to Hooker, 15 November 1864

Essays for Exhibition – Geological map of NZ – leaving Otago and collections for Wellington – Rimu furniture wood – disagrees with Haast's scooping theory of Glaciers – rock basin lakes – Wakatipu notes – relation of Sounds to Lakes – received

Hooker's Handbook – Lyell's address – relation of hot dry winds in NZ and Australia – Exhibition opens in five weeks, delayed by squabbles with local Govt. – compared notes on Alpines with Haast.

23. Hector to Hooker, 18 January 1865

Exhibition is open, to great success – the Governor did not attend – lost the last of the collecting season – General Geological Survey – encloses Exhibition Catalogue.

24. Hector to Hooker, 15 February 1865

Hopes for copies of Handbook – delay of Essays on New Zealand – Exhibition now complete, comments on contents – sends Catalogue, asks Hooker to show it to Sclater – endorsement of Buller, ornithologist – asks after scientists at home working on mosses – Exhibition photographs – corrections to Hooker's *Flora*.

25. Hector to Hooker, 15 March 1865

Leaves for Wellington soon – sends more complete Exhibition Catalogue – sends newspaper with notes on comparing Gold Fields – sends Buchanan's notes on *Cordyline*.

26. Hector to Hooker, 17 April 1865

In Otago until close of Exhibition – will establish Colonial Museum in Wellington – Buchanan to work in N. Island or Kaikoras with Hector – Fossil Flora and Coal-bearing beds – comments on distribution of Fossil record – sent photographs of fossils.

27. Hector to Hooker, 17 May 1865

Discussion of rock basins – Hector's tilting theory – has had drawings made of Fossil Plants from NZ Exhibition, asks for Hooker's comments – extensive discussion of NZ Coal bearing Formations – Moa bones – Haast on West Coast at the new diggings – Hector to send home complete Geological map of NZ – will be in Wellington soon, trying to get NZ Exhibition specimens for Colonial Museum – asks for F.L.S., comments on F.R.S. – asks after Handbook – sends proof of Buller's essay.

28. Hector to Hooker, 24 May 1865

Letter of introduction for Mr. Douglas, Colonial Bank Manager – to visit Kew.

29. Hector to Hooker, 16 June 1865

Hector and Buchanan for F.L.S. – accidentally put F.L.S. after Colenso's name when printing essay, asks Hooker to propose him – Fossil tracings to be named and sent to Wellington – now has complete set of drawings of all organic NZ remains – Hector's theory of submergence – asks for books, and further copies of *Flora NZ* – tracing of plant found at Shag Point.

30. Hector to Hooker, 17 July 1865

Hooker to talk with Lyell and Darwin about Hector – Report on NZ Exhibition soon ready – has a head of *D. giganteus* – off to Wellington soon – Native affairs occupying Assembly over Geological matters – West Coast rapidly opened up by Gold discoveries – Haast in West Coast – Hector sick of town life, wants to get into the field.

31. Hector to Hooker, 18 July 1865

Commissioners for NZ Exhibition to have medals struck in London – design competition for medals – Hooker asked to judge due to his knowledge of NZ vegetation.

32. Hector to Hooker, 13 August 1865

Arrived in Wellington – staying with Mantell – Native affairs and Imperial troops – "Exeter Hall nonsense" – Hooker's Handbook sitting undistributed in Govt. office – Museum is getting on – mosses and herbarium – Ramsay's lake basins: Hector can't see what he is driving at – has not seen Lyell's views on Ramsay.

33. Hector to Hooker, 13 September 1865

Govt. too busy with war to spend money on science – prepared examination of Island for Govt but they are not currently amenable – in new quarters – current state of museum and collections – Haast and the West Coast Coal Fields – Mantell put a question to the House regarding distribution of Hooker's *Flora* – Lyell's *New Elements* – to send fossil plants home to be worked up – Buchanan collecting in Otago – Sir. George Grey proposes a trip North – Colenso won't travel by sea.

34. Hector to Hooker, [Undated D: after 13-9-1865]

Mistake in Coal analysis tables sent to Hooker.

35. Hector to Hooker, 12 October 1865

Hardly been out of Wellington since arrival – frustration at Assembly – Home Govt Loan and Imperial troops – Native policy – Buchanan collecting but disappointed with results compared to Otago flora – Native names index to Handbook – asks after fossil tracings – Owen's *Palapteryx* – Haast, West Coast Gold and geological comments compared with Otago – volume of people during Gold rushes.

36. Hector to Hooker, 12 November 1865

Death of Sir William Hooker – fossil collections – worries that the Otago museum will not be cared for properly – leaves for North by next steamer, with Buchanan – Buchanan disappointed with Wellington collections – *Drymis* – Weld's *Veronica* – Ward's Case for Hooker – NZ gardens, including Ludlam's in the Hutt Valley – Lauder Lindsay, Hector's Coals and the Royal Society.

37. Hector to Hooker, 22 April 1866 [continued 8 May 1866]

At Kawau – Fellow of the Royal Society and fees – hopes Haast will succeed also – journey in the North – Geysers – Governor hopes to start a botanic garden there – University at Kawau – *Araucaria* cutting notes – notes on Kawau – continued from Wellington 8 May – trip to Kawhia, met Natives, travelled to Raglan – Governor overland to Waikato to meet Chiefs – the Great Thompson – to visit Taupo next summer – settling to writing – *Cordylines* – Haast up the Rakaia – Taxidermist – will effect Hooker's hints about the museum.

38. Hector to Hooker, 15 June 1866

Sends *Melicope* and an unrecognised from Mt. Egmont – Sir. George Grey making *Cordylina* collection – Ward Case – excitement at Panama steamer – encourages Hooker to take round the world trip – Telegraph Cable across Cooks Straits – war –

Petroleum at Taranaki – geological notes – Memo. regarding plants – *Araliaceae*, *Melicope*, tracings of fossil plants, *Damaras*, *Cyperaciae* – do not remit subscription as Govt. accounts need to be squared – staying with Sir. George.

39. Hector to Hooker, 24 June 1866

Panama route to open up NZ and Australia – Travers asks after his collections – asks Hooker to make a paper out of Hector's fossil drawings – focus on Ferns as they are common to NZ and New South Wales – Coals: dropping Paleontological division for chemical one, discussion of Hydrous and Anhydrous divisions – Skey's paper for R.S.E.

40. Hector to Hooker, 16 July 1866

Parliament have met but have not done anything yet due to distrust between Provinces – jokes that North to South climate is causing uncongeniality of pursuits – further papers about Petroleum and its relation to Brown Coals – Ward Case nearly ready – busy with report for General Assembly – Telegraph Cable to be laid next week.

41. Hector to Hooker, 17 August 1866

Hector's nomination for R.S. – sends two plants – back from laying Cooks Straits Cable, shore connections on South end to be completed – Haast disappointed about R.S.

42. Hector to Hooker, 5 September 1866

Formal notice of F.R.S. – attendance required, but Hector cannot – Ward Case nearly ready – *Cordylines* in it, seven distinct species - *Senecio rotundifolius* – Moa Egg and Chick bones, with Emu for comparison.

43. Hector to Hooker, 7 September 1866

Pittosporium said to be from Tongariro – *Cordyline* notes – Telegraph Cable complete – can't get a vote this year for Museum due to Provincialists fighting Centralists in the Assembly.

44. Hector to Hooker, 5 November 1866

Sends imperfect Maori Index to Handbook, duplicates to be sent to folk who know Maori for corrections – encloses publication on Coal Fields – just returned from Taranaki Petroleum beds, notes on – now headed to West Coast bush for three or four months – Buchanan to Kaikoras & Taranaki.

45. Hector to Hooker, 24 January 1867

In Nelson Mountains – discussion of classification of Geological phenomena; “we have been putting the cart before the horse” – Palaeozoic Fossils, resemblance to Vancouver Is. fossils – tell Lyell about Coals – sorry to mislead with Mt. Egmont plant – Colenso's trouble with Cryptogams – new alpine and state of NZ Botany – discussion of *Cordyline* – resemblance in Flora of Cape Farewell to N. Auckland – Dwarf *Weinmannia* and *W. racemosa* – Hooker as Umpire to NZ Botanical disputes – Ward cases – Thanks Hooker for writing to Royal Society Secretary.

46. Hector to Hooker, 13 May 1867

At diggings in Greymouth – Ward Cases despatched – Buchanan has been up Kaikoras and Mt. Egmont, disappointed with both – encloses letter from Curator of

Auckland Museum with query about a plant – encloses newspaper slips with notes on Hector's journey.

47. Hector to Hooker, 8 June 1867

Hector back in Wellington after seven months – arrival of Hooker's Handbook Pt. II, demand for more – Buchanan disappointed with Kaikora and Mt. Egmont excursions – Buchanan's Auckland plants: *Senecio* or *Ozothamnus*? – attempting to get NZ Govt. to supply plants to Kew after those they had were destroyed – fernery to protect ferns – Lyell on Croft fell short of a theory of Hector's on flooding of opposite hemispheres.

48. Hector to Hooker, 8 July 1867

Sir. George Grey's Native plants at Kawau – four Ward Cases in progress for Hooker – Hector stirring up Government for Botanic Garden, have selected a reserve – asks Hooker for a note on the matter to be shown to Ministers – glad at Haast's F.R.S.

49. Hector to Hooker, 8 August 1867

Has distributed Hooker's parcel of Falkland Island Grass – Haast F.R.S. – sends seeds – encloses twig of a plant from Canterbury, *Olearia*, questions species – an interesting *Coprosma* – Handbook Pt. II distributed by Government, asks for a Bookseller to distribute – Ludlam to send Nikou – Hector soon to Taupo where *C. indivisa* is cultivated, notes on different species.

50. Hector to Hooker, 18 August 1867

Thanks Hooker for attending to F.R.S. subscription – hard winter, “storms exceeding any on record”, snow and loss of sheep, Telegraph stopped – snow and alpine plants, compares to Jackson Bay Mts. in 1862.

51. Hector to Hooker, 7 September 1867

Sends chert flakes found in cooking ovens along with Moa bones – paper to be prepared on them – disapproves of the manner of Sir. George Grey recall.

52. Hector to Hooker, 16 September 1867

Travers' bones from cave in Collingwood, Nelson – Sir. George Grey regarding Kawau plants – asks for Hemlock seeds to cure scab in sheep.

53. Hector to Hooker, 7 October 1867

Hooker's trip and satisfaction regarding NZ Government's treatment of his Flora – a secret: Hooker will receive a Cabinet from a consortium of his friends – Hector busy; Moa paper not ready – to publish on Lake Basins theory – NZ printing establishments weak – Wardian cases away – Buchanan's *Senecio* was *Ozothamnus* – Buchanan's moss work lost through Wilson's action – discussion of NZ Glacial Epoch – Hector North to view Gold diggings – asks after chert flakes – received Kiwis – asks after Colenso's Maori Index, Mantell lent him a map.

54. Hector to Hooker, 27 October 1867

Hector on way to Taupo, to explore mountains – staying with brother of John Bidwill, has copy of his notes on Taupo district for comparison – Cabinet to be sent soon – discussion of *Cordylines* – Wellington overrun with Thistles, large sums spent to

eradicate them – they are now disappearing by themselves – sends some photos of Moa and Wellington.

55. Hector to Hooker, 4 November 1867

Sent Hooker's note regarding the Botanic Garden to Stafford – just reached Napier overland – after Thistles, new curse to the grass is *Perepere acaena* – a splendid garden in Napier where much planting has occurred.

56. Hector to Hooker, 7 January 1868

Four Cases of plants on the *Asterope* for Hooker, secured to the deck – same Bill includes Hooker's Cabinet – Hector has been at Taupo, Ruapehu & Tongariro; discussion and diagram of Volcanic activity – Hector waylaid by work for the Medical Board, of which he is President – comments on Hooker's British Association Presidency & chert flakes – is putting up a Maori House – demand for Handbook – Hooker's notes on *Olearia traversii*.

57. Hector to Hooker, 7 February 1868

Visited new Gold Fields at Thames – visited Sinclair – Kirk's new Barrier Island Pine – endorsement of Hutton – note on hurricane and earthquake.

58. Hector to Hooker, 1 March 1868

Successful arrival of Ward Case – encloses letter from Ludlam – Hector to escort the Duke of Edinburgh on his visit, will start for Auckland this week – Buchanan returned from South, done little in Recent Botany but has good Fossil Plants from Mesozoic Coal measures – comments on new wing of Museum and Maori House, encloses diagram.

59. Hector to Hooker, 2 April 1868

Visited Sir George Grey at Kawau, comments on plants and animals – going back again with Sir George Bowen, comments on – progress on the Ward Cases Hooker sent – Premier Stafford at Kawau, agrees with Hooker's suggestion of the necessity of a Botanic Garden.

60. Hector to Hooker, 3 June 1868

Comments on Kawakawa Coal Field, discussion of cretaceous-tertiary series – Haast has a Museum and splendid Moas, compares Hector's Moas – Kirk on the North Cape; a capital botanist but too critical for a new colony, discussion of Pine classifications – Duke of Edinburgh did not arrive, cost Hector his seasonal trip to Tongariro & Ruapehu – discussion of Lyell's *Principles* Vol. II.

61. Hector to Hooker, 6 June 1868

Great mortality of Hooker's Ward Case plants – a case Hector sent to Thwaites at Ceylon has failed – filling a case with potted *Podocarpus* & *Dacrydium* – stirring Sir George Grey up to procuring Native things for Hooker.

62. Hector to Hooker, 8 June 1868

Revels in Lyell's *Principles* Vol. II & Darwin's book, but sorry that Lyell has enlarged so much on N.Z. earthquakes – discussion of submergence versus elevation; diagram – asks after Seismometers.

63. Hector to Hooker, 9 July 1868

Hooker's Writing Table – Hector busy travelling to Canterbury and preparing for start of new session, so cannot comment further on Lyell or Darwin – saw Kew specimens at Canterbury, asks after some for Wellington, offers wood samples in exchange – sorry for fate of Ward Cases to Hooker - have specimens of Tuatara, will send one to Günter.

64. Hector to Hooker, 8 August 1868

Gratified that Lyell is interested in Hector's work – encloses memo re: Native childbirth – discussion of publication of Wellington Philosophic Society and New Zealand Institute papers, and agenda of meetings – meeting in carved Maori house – Haast unemployed, wants to work for Hector – sends sample Meteorological return.

65. Hector to Hooker, 8 September 1868

Sir George Grey has seeds for Hooker – extraordinary oceanic waves, discussion of time difference between their impact at various points – bad weather – banquet for Sir George Grey.

66. Hector to Hooker, 8 October 1868

Sends Ward Cases & answers to Native childbirth questions – N.Z. Institute flourishing – Travers on Economic Botany & Alpine flora – Hector on tidal waves – sends *Veronica* – Native shrubs in museum – Ludlam wants *Picia* seeds – Domain Act passed – Mantell against Owen on Moa and Kiwis.

67. Hector to Hooker, 7 November 1868

Comments on Board to help run Colonial Museum, not the way Hooker suggests it to be done – asks for prehistoric academics to study early traces of Maori – Hector to start for the South – to marry eldest daughter of Sir David Monroe and take trip to Sydney & Melbourne – hope to try Ruapehu if Natives are quiet – encloses photo of Hector and Miss. Monroe – *Celmisia* – notes on Hooker's seeds.

68. Hector to Hooker, 3 December 1868

Hector up Dun Mountains – will make note of Hooker's Museum notes in lecture – staying with Monroe – has Travers' son collecting – notes on acclimatisation of birds.

69. Hector to Hooker, 26 December 1868

Pleased to receive Willy – to be married in a few days – does not think Kawau would suit Willy – will enquire into Wicksteeds at Taranaki – will arrange for Willy to be met upon arrival.

70. Hector to Hooker, 3 January 1869

Rusticating after marriage – discussion of what to do when Willy arrives – [continued from 30 Jan] received Hooker's budget – Willy not yet arrived, Haast to take care of him on arrival at Lyttelton – Wicksteeds unsuitable – enquiring into Ingles at Kaikora – influential people will be kind to Willy for Hooker's sake – Nelson Mountains Coniferae – haul of corals, thought extinct, sent to Alman.

71. Hector to Hooker, 12 February 1869

Willy will arrive soon – comments on Ingles – encloses note from Mrs. Wicksteed, disapproves due to frontier – Hector to Otago – encloses note from Wellington Philosophic Society – [Wicksteed's letter attached].

72. Hector to Hooker, 22 February 1869

Willy arrived on 13th – Willy goes with Haultain on the *Sturt* to Whanganui – Buchanan goes also to collect Pliocene Tertiary fossils – Willy does not seem ill – Willy's letter to Hooker – Hector for Otago – distributed Hooker's seeds.

73. Hector to Hooker, 14 May 1869

Returned from South, found Willy in good health – decided not to put Willy on a run – comments on Willy's favourable physical and mental state – thinks of sending Willy to Kawau with Holt for the winter – sends Vol. I of Transactions of the N.Z. Institute – discussion of Hood's Saurian bones – Hector got *Glossopteris* in lower Carbonaceous beds – comments on Wardian cases – distributed Hooker's seeds – [note from Holt attached, outlining court-martial at Kawau and proposal for boarding Willy.]

74. Hector to Hooker, 6 June 1869

Willy reports early symptoms of an attack but Hector thinks he is well – Hector thinks Willy will do no good in N.Z. – Willy to go for a cruise in the *Sturt* – sends Hooker Meteorological Pamphlet – Observatory almost complete – Kew collection now set out – Botanic garden doing well – addition of birds nests and eggs, an Elephant skeleton and Reptilian bones to the Museum – notes on wind worn stone.

75. Hector to Hooker, 9 July 1869

Willy is well on the *Sturt* – Hector's brother-in-law dead – Buchanan painting fossils on stone – Wealden beds.

76. Hector to Hooker, 8 August 1869

Willy returned from cruise on *Sturt*, is well – Hector still means to send him home – sends newspaper clips to tell of N.Z. Institute activities – discussion of Earthquakes and their relation to the moon and sun – rock basins in Otago and Gold – political mess leading to exaggerated stories about the Natives.

77. Hector to Hooker, 3 September 1869

Willy back from *Sturt*, will not be able to leave for some months due to shipping – Hector to head South – Botanic Garden Bill passed.

78. Hector to Hooker, 3 October 1869

Willy's health good, off again in the *Sturt* – Hector just returned from Canterbury, will soon start for Auckland overland and look for evidence of Gold – Ward case plants – comments on state of Botanic Garden – asks for Canadian Serviceberry (*Amelanchier canadensis*) – postage on Hector's letters – notes on meeting of Philosophic Society – [note from Ludlam attached asking for Rhododendrons.]

79. Hector to Hooker, 31 October 1869

Comments on Willy – Hector's son born – Hector soon to Taupo – comments on Haast controversy.

80. Hector to Hooker, 1 November 1869

Asks Hooker to publish an attached letter regarding glacial periods in New Zealand.

81. Hector to Hooker, 26 November 1869

Great change in Willy – Hector thanks Capt. Fairchild on Hooker's behalf – has employed a tutor for Willy – arrival in Melbourne of wedgewood – Willy's expenses thus far.

82. Hector to Hooker, 12 December 1869

Hector to Tongariro – Maori left Taupo – comments on Willy's progress – [Incomplete copy].

83. Hector to Hooker, 20 January 1870

Hector returned from Taupo, comments on geology – comments on Willy – Vol. II Transaction of the N.Z. Institute – acknowledges receipt of vases and photograph of Hooker – note attached regarding plants sent by the *Halcyone*.

84. Hector to Hooker, 9 February 1870

Willy to London – discussion of geology and eruption of Ruapehu – Transactions of 1869 almost complete – printing catalogues and reports – English papers commenting on Maori troubles.

85. Hector to Hooker, 2 April 1870

Prospects of New Mail Route for the Colony – comments on seeds, Atlas Pines – Huxley's circular about nude photographs of Natives – Hood's saurians – Haast to work on survey.

86. Hector to Hooker, 30 April 1870

Exploring Colville Peninsula Gold Fields in Auckland – sends Vol. II Trans. N.Z. Institute – Kirk to explore Waikato – Atlas Pine seeds good – Hector camping in rebel country, near Te Kooti's land – Hector's letter re: Haast.

87. Hector to Hooker, 14 May 1870

Thanks Hooker for sending Hector's letter regarding Haast to Geological Magazine – discussion of Haast – notes on fossil display – asks if Hector should communicate with Colenso [regarding F.R.S.].

88. Hector to Hooker, 2 June 1870

Hopes Willy has arrived – proposed gift for Captain Fairchild – Hector busy with Catalogue, comments on Haast – comments on Botanic Garden – Government wants Hector to teach science – disfavoured comments on Lauder Lindsay's Botany of N.Z. – notes and diagram on Tongariro eruption – account of 1862 lahar – sends windworn stones.

89. Hector to Hooker, 2 July 1870

Received and distributed Hooker's seeds – does not believe Buller's rat to be the true Native Rat – Huxley's address – Hector to work on large collections of Saurian remains – news of Fairchild's new steamer, the *Luna* – comment on financial statement.

90. Hector to Hooker, 3 August 1870

Thoughts on Willy's return home – public loans – public lectures on Darwinism – Tongariro activity, Hector means to travel to the district – thoughts on global occurrences of phenomena previously thought to be local, e.g. Aurora Borealis; need for a register to record these occurrences – Hector's New Zealand earthquake register using the Telegraph – Museum Catalogue almost printed.

91. Hector to Hooker, 3 September 1870

Case of plants arrived – sends Travers' Photograms of NZ vegetation – sends Catalogue of Museum – comments on talk of University in Dunedin – sending exchanges to America – Kirk working in Herbarium.

92. Hector to Hooker, 1 October 1870

Received Student's Flora – asks after British plants for Herbarium – has *Cordylines* for Hooker – describes Botanic Gardens – jealousies have torn the University at Dunedin to bits – thanks for Notice of NZ Institute in *Nature* – sends *Pittosporum*, asks Hooker to compare Handbook – encloses new plant from small island in Wellington harbour.

93. Hector to Hooker, 29 October 1870

In Patea, where the hard fighting was two years ago – describes the geography and plant distribution – opinion of Kirk – intends trip to Ruapehu for botany and geology, describes Ruapehu and surrounds – seen Fairchild – Travers on his run, collecting – Mrs Hector delighted with photographs of Hooker and Sir Roderick.

94. Hector to Hooker, 3 December 1870

Sends early copy of Geological sketch of NZ – Hector has been away two months, has some small collections to send (*Veronicas* and *Cordylines*) – notes on Botanical Garden – the War [Franco-Prussian] absorbs all interest – Natural science collections in Paris.

95. Hector to Hooker, 2 January 1870

NZ Flax industry – posits offering prize in fibre research at London University – *Glaucium luteum* has flowered in Wellington – Tongariro sketches in *Nature* – Aurora Borealis and Australis – notes on meteor – asks Hooker to petition Vogel on behalf of Botanic Garden – notes on Botanic Garden – sends plants.

96. Hector to Hooker, 4 February 1870

Thanks for getting Tongariro sketches and Telegraph Department notice into *Nature* – Hector has traced the path of a meteor with the Telegraph network – encloses list of ferns – headed for West Coast Sounds with Governor and Commodore Stirling, hopes to get good dredgings – will not be able to get up Tongariro this season, but doubts the Maori are friendly – Hooker elected Honorary Member of the New Zealand Institute – New Zealand politics: "a reckless lot getting into power".

97. Hector to Hooker, 3 April 1871

Sends a letter disputing an address by Haast on Moa – trip to South with the Governor was interrupted by striking a rock in Bligh Sound – Hector's assistant drowned – Fairchild proud of his Telescope – Hector's wife at Nelson.

98. Hector to Hooker, 15 May 1871

Notes on Moa neck and feathers, relation to Kiwi feathers and Maori mats – Flax reports – sends Transactions of New Zealand Institute, Huxley no longer Honorary member – notes on Botanic Garden plantings – filling a Ward Case for Hooker – settlers have wantonly destroyed forest – Acclimatisation Society proposed to have space in Botanic Garden – Fairchild has Greenstone from Milford Sound, and a new boat (the *Luna*).

99. Hector to Hooker, 6 June[?] 1871

Note of introduction for William Buller, who intends to visit England.

100. Hector to Hooker, 7 July 1871

Hopes Hooker's trip to Morocco has enlivened him, opinions on sleeping rough in the bush – Hooker's arrangements regarding the flax are excellent, Hector to make Flax Exhibition during sitting of Parliament – notes on *Veronicas* – better able to get plants for Hooker now that the Botanic Gardens are established – Hutton back with Hector after a failed flax venture – Hector's second son born – opinions of Buller.

101. Hector to Hooker, 6 August 1871

Hector's dissatisfaction with travelling in New Zealand – N.Z. Government are encouraging planting on a large scale, asks Hooker's opinions for suitable species to put on Canterbury plains – Mrs Hector is ill from childbirth.

102. Hector to Hooker, 1 October 1871

Notes on formatting of Transactions – Flat problem: how do the Ultimate fibres adhere together? – Skey's paper on flax – new Parliament are ignorant of the use of the N.Z. Institute, there has been a row in the House – Botanical Gardens: Rhododendron gully doing well.

103. Hector to Hooker, 26 November 1871

Sending Type specimens of *Phormium* – Government have given Hector £200 to gather Californian tree seeds – New Zealanders are now aware of the necessity of large-scale planting – notes on cultivation – New Zealand building too many Railways – predicts education and Hector's projects will suffer when the money runs out.

104. Hector to Hooker, 19 February 1872

Commiserates with Hooker's problems with Ayrton, likens him to MacAndrew in Otago – asks after Black, who has been round the Sounds – Buchanan's drawing on stone – discussion of Institutional land endowments, such as the Science school in Christchurch – Hector has no hot house for plants – Canadian Serviceberry (*Amelanchier canadensis*) – Buller.

105. Hector to Hooker, 9 June 1872

Just returned from South Island – notes on plants sent to Hooker – Ludlam away in Sydney – asks after English opinion on Buller's Birds – sends Transactions of New Zealand Institute Vol. IV.

106. Hector to Hooker, 29 July 1872

Sends plant from Patea – Hector does not like the look of the Colony's financial state.

107. Hector to Hooker, 26 October 1872

Sends sympathies of New Zealand Scientists for Hooker's troubles with Ayrton, considers making official statement through New Zealand Institute – Provincial jealousies threatening Botanic Garden – Kew trees coming up well – Wellington Philosophic Society meeting weekly while Parliament is in session.

108. Hector to Hooker, [Undated E: June 1873 ?]

Hector finally has seed of *Cordyline indivisa* for Hooker – sends Transactions of New Zealand Institute Vol. V – Hector having fossil plants photo-lithographed, notes resemblance of Jurassic flora to Rajmahal Hills, India – Hector son and wife have had Typhoid, Mantell's wife and her niece have died – Hector overworked, has had no holiday for ten years – glad that troubles with Ayrton are over.

109. Hector to Hooker, 2 August 1873

Ludlam asks after Abyssinian Banana – Hector has obtained a glass house for ferns – trees are doing well, increase value of land by providing wind breaks – congratulations on Hooker's election as President of the Royal Society.

110. Hector to Hooker, 30 September 1873

Hector very busy – Hutton left for Professorship at Otago – Hector attempting to get through the Fossil Flora plates – Hooker to have Timber exhibits from Vienna – sends *Veronicas*.

111. Hector to Hooker, 8 May 1874

Hector sorry for the condition in which the Timber specimens arrived, will send another set – Hector has seeds from Professor Kellog in San Francisco – the Colonists are going in for planting, it has become a political cry – evidence for negative impact of deforestation on the environment – notes on East Cape Petroleum – sends Buchanan's flora proofs – Transactions advanced – arrival of the *Challenger* immanent – Kirk in bad health – glad Willie is doing well – Haultain Second Mate on the *Luna*.

112. Hector to Hooker, 4 July 1874

Sends Transactions of New Zealand Institute Vol. VI – *Challenger* in port but will not take much from New Zealand aside from what they got from the Museum – Thomson going over fossils – Dr. Berggren working with Buchanan – Hector not able to work much due to poisoned wound.

113. Hector to Hooker, 28 August 1874

Act passed on forest conservation – just got a vote to enlarge the Museum – intends to take a years' leave for England while building is in progress – notes on Brown Coals.

114. Hector to Hooker, 22 November 1874

Starting for England in a month – sending large collections in advance.

115. Hector to Hooker, 18 December 1874

Acknowledgment of case of plants.

116. Hector to Hooker, 24 December 1874

Leaving Wellington by the *Howrah* in February – seeds have arrived.

117. Hector to Hooker, 19 January 1875

Condolences on the death of Mrs Hooker – Hector leaving for England at end of month.

118. Hector to Hooker, 1 June 1875

Arrived in England – will visit Hooker at Kew with plants.

119. Hector to Hooker, 4 August 1875

Visited Brora Coal Field – working with Davis at the British Museum on fossils – will visit Kew when done to work on fossil plants – Mrs. Hector doing well – Hector secured lodgings close to the Museum, goes to Bristol at end of month.

120. Hector to Hooker, 17 September 1875

Bristol was dull – Hector and Mrs Hector having a jolly trip on the continent – visiting various Museums – remarks on meeting New Zealand Flax and Cabbage Trees everywhere – Geology of Switzerland similar to New Zealand.

121. Hector to Hooker, 16 October 1875

Returned from Paris – relates Mantell's comments on the loss of plants in the Ward Cases – Hector sorry for the loss of the *Piceas*.

122. Hector to Hooker, 9 November 1875

Visiting Wilson of the Melbourne Argus at Kent – organising collections for Philadelphia – the fate of the wood specimen labels – Berggren pleased with Hooker's offer to work at Kew.

123. Hector to Hooker, 14 December 1875

Just seen Vogel – Hector to Wales – asks Dyer to be told that Hector cannot find the fossil plant plates.

124. Hector to Hooker, 18 January 1876

Sending a collection to New Zealand – sent a memo to the A. General asking him to acknowledge the trouble Hooker has put himself to on the subject – Mrs Hector goes on the 10th, Hector very busy.

125. Hector to Hooker, 1 February 1876

Seeing Mrs Hector off so was not intending to attend the Linnean Society meeting, but will make time if there is anything urgent – Hector is not fully admitted yet – has plants for Hooker – asks to see Hooker's report on the Haast controversy.

126. Hector to Hooker, [Undated F: Late March 1876]

Hector leaving for New Zealand soon – Hooker invited to dinner – Col. Stanford asks for wood specimens in Philadelphia, Hector asks Hooker for specimens – [attached note regarding plants].

127. Hector to Hooker, 3 April 1876

Asks for an invitation to the R.S. soiree for Farmer – will not be able to spare time to pack up the fossil plants, which are bound for the British Museum – comments on age of New Zealand fossils and poor quality of drawings.

128. Hector to Hooker, [Undated G, 1875?]

Hector will try and visit Hooker about plants – will bring a plan of the Museum; has £1,000 to spend – Mrs Hector had a cold.

128A. Hector to Hooker, [Undated, 1875?]

[Partial] Asks for guidance regarding oscillations of floras in latitude.

129. Hector to Hooker, 20 September 1876

Back in Wellington from Frisco, finds that Mantell has kept things running smoothly – sends congratulations on Hooker's remarriage – the plants have suffered greatly on the voyage – Hooker's Sumner Report has been kept in the dark.

130. Hector to Hooker, 19 October 1876

Buchanan's enclosed paper on the *Mariattia* should be worthy of the Linnean – Hector busy with Transactions of New Zealand Institute Vol. IX and inspecting Field Survey – Vogel goes to England, has a note from Hector to Hooker – Vogel wants to be F.R.S. – Botanic Garden funding troubles.

131. Hector to Hooker, 14 December 1876

Ward cases full but won't send them for a few months – going over the Chatham Islands and West Coast Sounds with Marquis of Normanby – *Senecio perdicoides* flowered for first time.

132. Hector to Hooker, 8 February 1877

Cases sent – gardens not in good order, but trees growing splendidly – hopes Hooker has seen Ludlam.

133. Hector to Hooker, 9 March 1877

Received books, will hand them over to the Philosophic Society – sends *Panax*, comments on – Sir David Monro has died. [Note attached from New Zealand Institute acknowledging receipt of items]

134. Hector to Hooker, 9 April 1877

Notes on plants sent – Hector approves of the working up of the *Challenger* collections – some magnificent fossil finds in New Zealand of late – Haast has returned to the society but no mention has been made of Hooker's Sumner report.

135. Hector to Hooker, 31 May 1877

Returned from West Coast – collecting for Hooker is more difficult than it used to be, due to increased responsibilities, less time, and lack of assistants – approves of Hooker's report on the Meteorological Committee.

136. Hector to Hooker, 29 June 1877

A number of things Hooker asks for can only be got in the extreme North and South – Hector has had a bad fever from a burst drain under his office.

137. Hector to Hooker, 23 August 1877

Congratulations on Hooker's Knighthood – Hector has made a good recovery from his fever – congratulations on Dyer's marriage to Hooker's daughter.

138. Hector to Hooker, 19 March 1878

Letter of introduction for Mr Carleton, who goes to England to apply to London University on matters relating to examinations – just closed the annual meeting of the University Senate – asks after Hooker's notes on Colorado – sent books to Mrs. Dyer.

139. Hector to Hooker, 21 June 1878

Sends Transactions of New Zealand Institute Vol. X – Kirk's paper on additions to Hooker's Handbook – Skey's paper on Mineral Waters – Buchanan's illustrations of N.Z. Grasses – Hector busy preparing for the session, has lots of Geological work to bring out, Lower Mesozoic formations – have found *Glossopteris* – collection of Timber specimens for Kew advances slowly.

140. Hector to Hooker, 19 July 1878 [Draft]

Hector laments Hooker's retirement from Chair of Royal Society – praise for the work Hooker has done.

141. Hector to Hooker, 4 January 1879

Hector exploring the King Country between the Mokau and the Waikato – first European allowed past the Aukati since 1860 – encloses a new plant – met with Rewi Maniapoto and others and talked of the great North Railway to Auckland.

142. Hector to Hooker, 26 April 1879

Thanks Hooker for copy of lecture on plant distribution – Hooker excludes *Acacia* and *Proteaceae* when talking of New Zealand flora – Hector never completed his account of the New Zealand fossil flora, comments on – sends Botanical section of Transactions of New Zealand Institute Vol. XI.

143. Hector to Hooker, 17 February 1880

Letter of introduction for Justice Gillies.

144. Hector to Hooker, 17 July 1880

Glad Hooker is pleased with the Grasses – discussion of funding of the New Zealand Institute – Hector will keep *Cordylines* in mind for Hooker, takes measures to rediscover *Dactylanthus*.

145. Hector to Hooker, 3 December 1880

Thanks for present of "Henslow's Botany" for Hector's children – they send Hooker photographs of their botanical efforts – thanks for notice in *Nature* of the Government's funding cut to the New Zealand Institute – Hector arranged the New Zealand share of Exhibition in Melbourne, sends Catalogue – discussion of manufacturing industries and trade.

146. Hector to Hooker, 1 January 1881

Maori photographs for Darwin – encloses and comments on advert for Hutton's successor at Agricultural College, Christchurch.

147. Hector to Hooker, 26 March 1881

Heading for Melbourne to close NZ share of Exhibition – opinions of Kirk – sends Transactions of New Zealand Institute Vol. XIII and asks for notice in *Nature* – news of scientific developments – greatly pleased with Miss. North and her drawings – will send Timbers from Melbourne for Hooker – sends photographs of Sydney Exhibit.

148. Hector to Hooker, 17 July 1881

Timber specimens shipped from Melbourne to Kew – New Zealand has done well in terms of Exhibition prizes – Kirk has settled to lecturing at the Agricultural College in Christchurch.

149. Hector to Hooker, 13 August 1881

Hooker's holiday – Timber specimens – Buchanan working on new Alpines – House voted £150 for Botanical exploration of Tararua and Ruahine ranges – the usual wrangle over Departmental funds.

150. Hector to Hooker, 10 September 1881

Sends plants – sends slip of Proceedings of Wellington Philosophic Society – [encloses Buchanan's notes on *Raoulia mackayi* and notes on genus *Raoulia*.]

151. Hector to Hooker, 10 October 1881

Buchanan working on Alpines – state of Botanic Gardens – asks advice on olive trees and other plants of economic value – development of local industries – next volume of Transactions of New Zealand Institute will be strong in Botany; Hector proud – Timbers from Melbourne.

152. Hector to Hooker, 25 March 1882

Apologises for unsatisfactory state of the Timbers – Botanic Garden, Grass book and politics – encloses Botany section of Transactions of New Zealand Institute Vol. XIV.

153. Hector to Hooker, 23 April 1883

Hooker intending to undertake new edition of Handbook to Flora – Hooker's authority on NZ botany – to send Transactions of New Zealand Institute Vol. XV – Hector in the King Country.

154. Hector to Hooker, 18 May 1883

Colenso's F.R.S. endorsement – thanks for pamphlets – Ward Case well established – Hector likes young Peek.

155. Hector to Hooker, 10 July 1883

Plants by the *Ionic* – political pressure for Students' Flora & Botany text book.

156. Hector to Hooker, 16 November 1883

Plants by *Ionic* did not arrive well.

157. Hector to Hooker, 28 March 1884

Sends Botany section of Transactions of New Zealand Institute Vol. XVI – Colenso's astonishing paper – trip with Governor to Stuart Island and West Coast Sounds – plates for Botany sheets.

158. Hector to Hooker, 12 September 1884

Lefroy's F.R.S. – discussion of *Cordyline* species – notes on packing Ward Cases.

159. Hector to Hooker, 1 January 1885

Sends photograph of Hooker's godson Lyell – Hector has lost Cox, his right hand man – Buchanan is failing fast – Kirk's forestry position – Hector's dismay at previous inaction on conservation.

160. Hector to Hooker, 19 November 1885

Photo of *Fourcraea*, asks Hooker's help in identification – Buchanan retired – F.R.S. for Jervois – Haast to the Colonial Exhibition in place of Hector – Hector has had a note from Hooker's son Brian in Melbourne, asking for work.

161. Hector to Hooker, 11 September 1886

Danthonia buchanani – Buchanan lives in Dunedin now – mistake over specimens in NZ Flora, Otago Herbarium – asks Hooker not to bother Colonial Office "about that other matter".

162. Hector to Hooker, 7 February 1894

Hector likes Hooker's son Brian but is unable to help him much – Hector losing power over organisations – comments on state of the Colony – Hector's family growing up – description of Hector's house – Hector has lost the Botanic Gardens – looking forward to publication of Sir J. Banks' journal.

163. Hector to Hooker, 31 March 1898

Thanks for portrait of Hooker – sends photo of Hector – Maori Art Book – Kirk died – what to do with his Flora.

164. Hector to Hooker, 14 May 1898

Sends Kirk's unfinished Flora NZ, asks for Hooker's opinions.

165. Hector to Hooker, 18 August 1898

Agrees with Hooker's comments on Kirk's Flora – sends them on to the Government – Hector will attempt to publish Masee's work on fungi.

The letters that follow are presented in chronological order. A few are undated, and they have been fitted in to the series as best they can from the content of the letters.

The originals of all but two of the letters are held in the Archives of the Royal Botanic Gardens, Kew, UK. The Kew reference is the first given to each letter (mainly prefixed DC – Director’s correspondence). Many of the Kew letters were microfilmed (Micro-Ms-Coll-10), and a copy is held at the Alexander Turnbull Library and some other institutions.

Two letters (8 and 140) are drafts that were never sent, and the originals are held in the archives of the Museum of New Zealand Te Papa Tongarewa (prefixed MU).

1: Hector to Hooker, 31-8-1860

Kew DC 218, 151-152

Edinburgh
31st August 1860

My Dear Hooker,

I am glad that you have been able to secure a holiday at last, and I wish you every success in the endeavour to enjoy yourself and recruit for future work. I shall write to Sullivan to call at Bakers about the Aneroid and you may trust to getting it in time. I find that mine was taken out to Selkirk by my future brother-in-law and has got out of order – otherwise I should have sent it for you to take if you liked.

You say “Clelands views” – as to what? – I don’t think I ever told you about his kirk tendencies – but if it can possibly refer to that, he is every thing that could be wish[ed] for in that respect by the most particular. A Zealous Free Churchman but with this feature that his love for Nature keeps him from bigotry. I hope that nothing I ever said has led you to think otherwise of him in this respect, or that you judged that from being my friend he must even agree with myself on these subjects. – I wish very much you had seen him as he is a fine earnest fellow in every way. Paget must have got a letter from Turner some time ago, in which all his qualities are detailed. You might remind him of it.

I have seen Dickson, and finding that he knows all about your writing to Balfour I had no dilemmas in speaking to him on the subject. At first he was rather against the employment on the ground that it might prevent him from prosecuting the study, but I assured him that he would have a large amount of spare time & that I had no doubt but that you would gladly let him have the use of the Kew collections to study from, which caused him at once to take a new view of the matter. He says that in your note to Balfour, by the way, you express yourself so strongly that he thought you must have merely one of Schleidens “haymakers” and that there might be something in the duties that would prevent him following out liberal Botany. As well as I could I told him what I think are your views of a liberal Botanist. Neither extreme haymaking nor extreme morphology. He appears to be a fine fellow and really anxious to devote himself to Botany & one whom I think you may safely encourage.

I am very hard on you, asking you to read all this long rattle in the midst of your arrangements which I am sure must keep you very busy at present. I have gone over Balfours Cones once. There are lots of varieties and some very puzzling ones. He has them named as species. Cone of *P. monticola* with some brush from an exposed branch makes *P. balfourianum* & so on.

With best regards to Mrs. Hooker & for Sir William
I remain ever
Yours very sincerely
James Hector.

P.S. Dickson has just called on me and shown me your letter to Balfour. It is a rouser & enough to frighten false Botanists. I have advised D. to write to you himself & you may expect to hear from him. Could he get his Thesis published in the *Linnean Transactions*? There are five Photograph Plates.

2: Hector to Hooker, Undated A
Kew DC174, 487
ATL Micro-MS-Coll-10-16, 523-525

[Undated: 1860]¹

My Dear Hooker,

I dont know what suggested Religious view to my friend but at any rate in reading your note that idea took exclusive hold & I adressed myself to it "right off". It is a good joke & you can roast me about it when we meet.

I saw Dickson today & also the letter he has written to you. I think you will be pleased with this get up of the Thesis. Of the matter I dont pretend to judge. I think I may safely stake the confidence you so kindly place in my judgement, on Dicksons' real merit & I can assure you I should not like to risk that confidence lightly. When I read your expression[?] of it I felt it the greatest honour I have ever received, & I hope I shall never conduct myself so that I shall lose it.

There is no hope of my seeing you until your return from the Holy Land. I hope your crusade will be a successful one. I shall be back in London a little after the middle of this month & as I suppose Mrs Hooker will always be in communication with you if I think of writing you I shall adress you through her.

With my best wishes. I remain ever yours sincerely
James Hector.

Dr. Hooker
Kew
London
Wednesday morning

¹ Hooker visited the Holy Land in Autumn 1860, so this letter was probably written in September 1860, soon after the letter of 31 August 1860. It is filed in the Kew letterbook between Hector's letters of 5 November 1866 and 24 January 1867.

3: Hector to Hooker, Undated B

Kew DC174, 406

ATL Micro-MS-Coll-10-16, 381-382

[Undated]²

My dear Hooker,

I enclose the "*Times*" slip about the Nova Scotia Gold diggings. I should have sent it sooner.

I think I will not need it any more so you need not trouble returning it. I am just going to start for Scotland.

I saw Murchison on Saturday & of his own accord he asked me to break off with Windham & to close with the N. Zealanders. I have done so.

I expect to return in a week or two when I shall see you but I will write & let you know the time of my starting as soon as I have it myself.

Ever Yours Sincerely
James Hector.

Gate street
Monday evening

I am ashamed to find that I have still to return Kirks' letters. I have twice carried them out to Kew & back in my pocket. Many thanks – they are very interesting.

4: Hector to Hooker, Undated C

Kew DC174, 408(1)

ATL Micro-MS-Coll-10-16, 387-389

North Berwick, near Edinburgh
[Undated]

My Dear Hooker,

I dont think I gave you my adress before I left so that if you think of anything for my ear before I return I now send it to you. I am out here spending this Sunday with my uncle but will return to Edinburgh tomorrow.

This is a most beautiful district & the harvest is further on than anywhere I have seen. The inhabitants of this favoured region say they have had too little rain this year! Where else

² Probably about September 1861.

can they say that. The summer is evidently over now though, as there is clear frost & heavy dew every night.

I hear you have written to Balfour about Dickson. I heard it from Dickson's father. Balfour is in the Highlands so I have not seen him yet.

The Californian Photographs have reduced most beautifully. In a few days I shall be able to send Sir William his copies along with a few of those taken by the N.W. Boundary Commission.

I live close to the Bot. Gardens in Edinburgh & shall devote my mornings for a while to going over their Pines & herbarium & museum specimens to see if I can pick up any "wrinkles".

I hope to be South again by the middle of September but I have some awkward private business to attend to. I shall however endeavour not to be idle. I should like much to hear your plans when you fix them.

With compliments to Sir William I remain ever
Yours very Sincerely
James Hector.

Adress to
5 Inverlieth Terrace
Edinburgh.

--- ---- N. Berwick
Sunday morning

5: Hector to Hooker, 22-10-1861
Kew DC 174, 407
ATL Micro-MS-Coll-10-16, 383-385

44 Northumberland Street
Edinburgh
22nd October 1861

My dear Hooker

I think I can now almost venture to say what my plans are to be – but the agreement is not yet finally drawn up.

I shall send my assistant (when I get one) out from London direct by a ship that leaves for Otago on Dec. 20th with all the out fit of instruments &c. & I shall start as soon after as possible on the overland route to Australia & spend the time I shall thus save[?] in visiting the "diggings" – the agents have agreed to allow me the greater part of the extra passage money so that I can do this.

I am getting some of the things I am going to take made here so that I shall not return to London till the 7th of Nov.

I must give up all idea of the Lecture for the Royal Institution as with all my other bother I would be sure to make a mess of it. Besides I will in all probability be away before even the 1st Lecture is given & that I could hardly expect them to allot to me.

Have you got a spare proof you could send me of the tabular part of our Arctic paper. I think it would help me in what I am doing at that work. I find it very slow & not at all satisfactory by th--- it was much easier to do the big talk than to stew[?] through the detailed proof.

I have written to Reeks about a Charles S. Wood who has charge of a school of mines at Bristol to try & get him to go with me. Do you know of any one? –

Ever Yours Sincerely
James Hector

Dr Hooker
Kew

6: Hector to Hooker, 27-12-1861
Kew DC 174, 408(2)
ATL Micro-MS-Coll-10-16, 386-387

44 Northumberland St.
Edinbr.
27th December 1861

My dear Hooker,

I start for London this evening so you may depend on my being with you on the 3rd Janry.

Thanks for the report by Haast. I shall take care to return it.

The contract is now signed & all the things are off & I have nothing to do now but go after them.

No pocket sextants have been made by A--- such as you described since those made for Galbraith 12 years ago.

A--- still has the pattern however & could make more. I trust I will tell you all about it on the 3rd.

With kindest regards & seasonable wishes to Mrs Hooker the bairns & yourself believe me.
Ever Yours Sincerely
James Hector.

7: Hector to Hooker, 20-2-1862

Kew DC 174, 153-156

Point de Gatte
Ceylon
20th February 1862

My dear Hooker,

I have now returned from the interior of the Island and only wait for the arrival of the Mail from England to resume my journey to Melbourne. It is expected to arrive either today or during the night. I enjoyed my overland trip very much but of course only saw enough to make me regret being so hurried. In France I had a pleasant trip in Auvergne with Palliser (who came to Marseilles with me) & had several walks over the Ancient lavas, but could not make the ascent of the Puy de Dome on account of the snow. We made no stay at Malta or Alexandria & at Cairo only for a few hours. The desert came quite up to my expectations and I should think that quite enough of it is seen from the Railway. However there were two newly married couples among the passengers who had come out to spend a honeymoon of 40 days in it! It appears to be very perfectly terraced towards Suez & the shape of an ancient coast line is very distinctly marked along the base of high cliffs to the South of the Railway. As to whether a canal across the isthmus will become sanded up, I was struck by observing that in many places the pits out of which Railway ballast have been dug were not in the least obliterated. The loose sand seems to be all accumulating in high ridges (80 to 100 ft) that lie NW to SE & no doubt move slowly on with the prevailing wind to the NE & it is only when any thing crosses in the way of one of them that it will be overwhelmed. The rest of the surface is hard and thickly strewn with Ironstone nodules & small pebbles that form a crust.

We had rather cool weather in the Red Sea. There is fine field in its lower part for any geologist that wants to study natural dissections of volcanoes if he can stand the heat. I suppose nothing either is known of the Island of Socotra.

We got to Ceylon on the 6th and I at once started for Colombo & Kandy to deliver your note to Mr. Thwaites & nothing could be kinder than the reception he gave me. He is not very strong just now. He is disspeptic I think, but he was all ready for a trip in to the Mts. to inspect the C----- Gardens, & only waiting till the weather became more settled. He took me to Major Skinner who planned a trip for me through the jungle, but on account of the continual rain advised me to give it up. However I had several trips in various directions from Kandy & those returned to Colombo by a more northern route riding part of the way and descending the rest on two canoes lashed together. I thus got a very fair idea of the look of tropical vegetation which quite bewilders me with variety. The Geology of the country is very simple as you know. A kernal of metamorphic rocks with N & S strike set in a flat plain. But how this plain has been formed would be a very interesting thing to make out as there is no trace anywhere I have seen of recent elevation or any superficial deposit excepting what is due to pluvial action. The rocks are the least altered metamorphic rocks I have ever seen.

It seems as if the chemical action had been the most powerful as distinguished from the mechanical. For though rather imperfectly crystalized they are beautifully folliated while on the other hand the dips & plications are gentle & thus almost total absence of joints, fissures & cross veins. There is plenty of Quartz but it is all interbedded & does not occur in veins or true "reefs" & therefore there is no hope of gold. The way in which these

metamorphic rocks decompose into “Kabook” first & then into soft red till that is easily washed away is very wonderful & the smooth “Elephants backs” of hard rock that are thus left in the low grounds with smooth and Pseudo-scratched surfaces would if in Lat. 50° N, be[?] put down at once to glacial action. This decomposition of hard tough gneiss into soft pulp is not merely a superficial thing but as I saw by road cutting in progress in the Mountains, extends for more than 20 feet beneath the surface, (that being the depth of the cutting) & apparently had no relation to the drainage form of surface or to the dip of the rocks themselves.

Here there is a hard tough rock worn & erroded into pot holes & smooth undulating & mammillated surfaces & by no tremendous force at all (except tropical Sun? – Brysons idea that metamorphic rocks have been formed at a temperature of 88° under pressure with moisture. What would be the effect of the same constant temperature under the air?). In this case would roasted rock stand for rotten rock? -) Bearing on the time that it takes to decompose the surface as it becomes exposed by the removal of the rotten rock, I saw some old cuttings on the roads, with the marks still remaining of blast holes, shewing that when the road was made it must have been solid rock but now it can be easily dug out by the hand like sand. Every variety of mineral mixture of the rock seems to to [sic] give way before the disintegrating force sooner or latter, some of the hornblende rocks resisting longest. Even what looks tolerably compact granular or seems crystalline Quartz crumbles down into coarse sand. Although the shape of the surface would be well adapted for preserving any terraced materials or other results of marine action, there is not a trace of it as I said before. Quite the reverse for all the hollows & slopes are covered with thick accumulations of the red unstratified till, resting just as it would accumulate from the rotten rock under atmospheric agencies. I dont mean by all this rambling stuff that I have bored you with, in the least to doubt that the phenomena in the North have not been rightly read, but this rotten rock erroision is a method, new to me, at least on such a large scale, by which the surface of rocky country tends to become reduced to the sea level. In California I saw rotten rock but those clearly due to the decomposition in the air of Iron Pyrites which the bed contains in large quantities. Here as in that country the decomposition ceases below the water line of the country – that is below the level at which water flows in the valleys, or if on the coast, when it reaches the sea level.

I have just seen Blanford off for England & I suppose he will have called on you before you get this, as he has plants in a Wardian Case for you. He is a very capital fellow I think. I suppose he will tell you all about how he came to thi-- up the Indian Geol. survey. Its very ----- to be ----- I think. I am afraid it is because I have so little news to tell you that I have filled up this with bad Geology in manner unmerciful to you. By the way, Thwaites seems very strong for Darwin. If he brings out his Flora of Ceylon that he is working at in that spirit, it will do good. I hope you are not killing yourself with the “Gen: Plantarium.”

I shall probably not write again to you till I get to New Zealand when I will tell you of my Australian Experiences. I am to take charge of a cargo of Fireflies and Lizzards from this – a scheme of Mr. Thwaites’ to hand these over to the acclimatization society in Australia.

With kindest regards to Sir William & yourself I remain
Ever Yours
James Hector

Dr. Jos. D Hooker

Please tell Huxley I did not get climbing Perch, but all the fish swim[?] & jump on the rocks here.

8: Hector to Hooker, 9-7-1862

Te Papa MU000198/001/0002

Dunedin
9th July 1862
[Draft letter – not sent]

My dear Hooker,

I am sorry to say that I have missed the mails since I reached this place without having written to inform you of my safe arrival. I got here on the 14th of April, direct from Melbourne where I spent a most pleasant and profitable month with Selwyn examining the geology of the Gold Fields. I was so constantly travelling about in Victoria that I did not see very much of Dr. Muller. However I was all over his gardens and greenhouses which are kept in first rate order. He was working very hard at the Flora of Australia but I suppose he keeps you fully posted up on this subject. He is very bitter against Darwin, but as far as I could judge has come on some very interesting facts in the distribution of species in Victoria that I hope he will discuss in his work, as they may cut in two ways. You know the configuration of Victoria is very marked, being divided by a low water shed with the Murray R. District & the sea board, the first being arid and true Plain Country, the other presenting great variety of surface & soil &c. All the streams to the North have peculiar fish not found in those flowing South & vice versa. Then to the East there is the true Alp district of Gippsland with snowy Mts. As far as I could make out he has forms of the same species, distinct and peculiar each to one of the above districts. He seems to be very particular in accumulating varieties with these localities, so a tabulation of his work such as you did for them[?] would give first rate results. But all this is not telling you about N.Z. which I dare say will interest you most.

The ship with all my goods & chattels only reached this two days before me so I made a very lucky hit. My assistant (Wood) only arrived however on the 5th of June so that I had lots of time to get things into a little order and also to have been over nearly all of the settled parts of the Province. The Government here are everything that can be desired as far as liberality to me is concerned. They have built me a capital office, museum store & laboratory, after my own plans and have agreed to fence in a good

[End of draft]

9: Hector to Hooker, 1-9-1862

Kew DC 174, 410-413

ATL Micro-MS-Coll-10-16, 390-394

Dunedin
1st September 1862

My dear Hooker,

I have now been here since the end of April and excepting a short note informing you of my arrival I don't think I have yet sent you any account of my doings at the Antipodes. You have not been overlooked however but have only shared the fate of all my correspondents & been the victim of my procrastination. I must again thank you for your splendid gift of the *Flora Zelandiae*. It has arrived in capital preservation & is in constant danger of being borrowed, but I never let it out of my sight. I had a duplicate of the Introductory Essay & that has been through several hands already – I have impressed upon Government the necessity of a thorough collection of the Botany of the Province being made without delay & as spring has begun I have set a collector at work to gather the Cryptogams privately until the matter is taken up by Gov. I have engaged Buchanan the person you may perhaps remember you recommended to me at Mr. Wilsons' dinner. He seems to be a capital hand at it, & I am making him write full notes with any specimens that require them. I wish I only had more time to devote to it myself but I must be content to mainly overlook in that & a great many other things. He shall have the best opportunities I can find for him. Until December he will be working in the North-East Valley – close to Dunedin, which is one of the best & richest spots in the Province. After that I shall be going I hope to the West Coast & of course shall take him with lots of paper, so that I hope to have a fine harvest for you soon.

I don't know whether you are aware that this Province is nearly treeless. It took me very much by surprise I know, when I found that excepting a patch of forest around Dunedin, and a few other clumps of bush, as they are called, nestled generally on the SE slopes of the hills, there are no more trees here than in the American Oregon Country. This is of course in the Eastern half of the Province which I have alone seen as yet. The surface of the country is very broken, but the hills & mountains have smooth outlines to their summits, and enclose large basins which are filled with terraced plains of tertiary deposits, exactly the same as those in British Columbia. Indeed I always fancy the country to be exactly the same as if instead of the rocky Mts. you had the sea bounding British Columbia to the eastward & as far as I have seen the Geological structure also agrees with this. The pasturage however is wonderfully rich even to an altitude of 3500 ft on isolated hills. Burnt timber is found lying on the ground over most of the Ranges & often it is said of species of trees only found now in the North Island. I shall try and find this out. The residents here seem all to think that the whole country was wooded at one time, but I think there have been also very extensive trails of open country especially in the basins, which I don't believe were even covered with timber after the drying up of the lakes which occupied them in later tertiary times. However there is no doubt that the forests were at one time much more continuous than now. The wooded districts which still remain may be grouped thus.

[Diagram of the lower South Island and Stewart Island on next page.]



1. The Dunedin Bush including a good many patches along the coast to the Northwards. The NE Valley collections will give an idea of this botanical district.
2. The SE bush is quite unknown excepting at a few parts along the coast. It is very dense & of great extent & is said to be different in appearance to the Dunedin bush.
3. West Coast Bush which you know as much about & more perhaps than any one else.
4. The Lake District bush. In the Valleys of the highest Mts. of this Province, & bounding the enormous lakes which I lately have discerned there.
5. Stuart Island bush.

All this I think we may fairly expect to yield something or other peculiar to itself & my wish is to have each of these collected from separately. The intermediate pasture Country is of two kinds. We have a range of high ground running accross the Island at right angles to the Back bone. North of this the grasses are of the arid type – in tufts & exactly similar in habit to the Oregon lunch grass. There are few plants intermixed with it under an altitude of 1500 ft in the North region, & the grasses are what are turned out & lovely grasses by the runholders. On the other hand, south of the transverse range there is none of this kind of grass & as a rule the pasture is more luxurious but very mixed & coarse, already note the tutu (Coriaria isnt it).

I enclose a copy of a piece of a suggestive report I have sent in to Government & if you could only write to me & back me up I have no doubt we could get the thing managed rightly. [*Marginal note:* I dont know if I was quite justified in saying so much, but I hope I have done no harm – I had to say something.] I also send you a copy of a letter I have written about the Gold Fields. I hope you get the newspaper with the summary by our mail regularly. My attention has been very much divided since I arrived, between work in town & travelling about the country. My chief assistant Wood arrived out here in bad health so that he was obliged to leave for a time to regain his health in Australia. So that I have had a great deal more on my hands than I would have undertaken had I not counted on his help. I have built an Office with a laboratory attached, also a Meteorological Observatory & a place with shelves which is the germ cell of a Museum. I employ 4 assistants, a draughtsman & a clerk & 5 or 6 men. I have already gone rapidly once about 1/3 of the Province & understand the general state well enough I think to venture in a preliminary report which I am now preparing. Our Coal (at least some of it will prove to be Mesozoic). I have found leaves very like those from Burr----- my specimens. Wont it be curious if I can establish another extension of the Mesozoic Carboniferous period. I have well preserved fossil floras of 3

distinct epochs I think & none older than Mesozoic but as I have Molusca wi--- ---- of them we may perhaps got their exact position. I hope to send you the report very soon & I trust I shall not again neglect to write to you for such long time.

With kind regards to Sir William I remain ever sincerely yours
James Hector

Dr Hooker
Kew

[*Marginal note to the first page:*]

I will try & get a good map of the Province so far as it is now known & enclose it with this if possible.

10: Hector to Hooker, 27-3-1863

Kew DC 174, 414

ATL Micro-MS-Coll-16, 394-395

Dunedin
27th March 1863

My dear Hooker,

I send with this the selection of alpine plants referred to in my letter by this same mail. I trust both letters will reach you safely. I hope you get the box of plants all right. It was despatched while I was in the interior for I wrote you at the same time also.

This summers gathering will be sent home as soon as my men come in for the winter, but I will first have these properly arranged, and the sketches and notes properly worked up for you. I send this by Southhampton, & as the other letter goes by Marseilles you will have it first. I have only been in town 5 days & start back for the Mts. again to morrow.

Ever Yours Sincerely
James Hector

I shall try & find time to post up a map to date & send it to you w. this.

P.S. The parcel of plants I have closed by mistake so this goes with the other letter.

11: Hector to Hooker, 11-5-1863

Kew DC 174, 414-415

ATL Micro-MS-Coll-16, 395-397

Dunedin
11th May 1863

My dear Hooker,

I have just received your February letter. Many thanks for the support & encouragement you give me by approving of my work.³ I am so glad that my plans for the Botany please you and only hope that I shall be able to carry them out to your satisfaction.

I wrote to you by last mail & forwarded a sample of our Alpine gatherings of this last summer. There are few in new localities & good altitude & may contain novelties - but I lost the best of the season as many even of the Alpines are past flower before I got on the ground - & moreover this seems to have been a harder season as many plants appear not to have flowered at all. The whole of my party have now returned to town & all the collections are in good order. A number of novelties in the way of young shrubs have arrived & been put under the care of a capital nursery gardener who has undertaken to look after them for us.

The dried plants and seeds will be sent to you as soon as they are arranged & along with the field notes & drawings by Buchanan. I shall keep a full set for the Provincial Museum which they are going to let me build (except of course in the case of a unique when it will go to you). All the plants will be numbered even to varieties so that you will be able to furnish me easily with the authentic names.

I must however leave the preparation of the Plants for you to the care of Buchanan as I am just going to start for the West Coast to spend the winter in exploring the various sounds so that we may know something of these before next season.

I don't like to fling away the summer on this work as I can spend it to more advantage in the Mtns. For this work I have engaged a small schooner of 20 tons with a large crew of 7 men, all picked hands for the work. I prefer this small craft which is noted for her sailing qualities because she is so small that she can be pulled with long sweeps if we get into any dangerous fix. I take one assistant with me to do clerk work. For the boat work I have had a little life boat built expressly for the purpose. To make our safety more certain at the Harbour Master's recommendation I am to engage a Native Sealing boat with a crew of nine Maories to accompany me from Jacobs River⁴ which is a native settlement on the Southwest Coast. I shall be gone perhaps for 5 months but shall probably have some opportunity of sending letters home during this time - in which case you will not be forgotten. Even though it is winter I anticipate being able to do good work in this little known region. Of course I won't be able to do much for Botany - but I must do the best I can & make another trip there in the summer. I expect to have less fog & fewer heavy gales to contend with at this season but my expedition is freely criticised & condemned by many, though it is exciting great interest & expectation both here & in Melbourne.

³ Hooker to Hector, 2 February 1863, "A thousand thanks for your long & interesting letter of Sept 1 which is very full of information to me. ... I am extremely glad to see your timely representation to Govt. on behalf of the Botany of the Province."

⁴ Now known as Riverton.

I am taking an apparatus for deep sea dredging & a spread winch & tackle for working it so I expect some good results. I have 500 fathoms of line which will let me get up some bottom from those deep inlets & that will help greatly to clear up some curious points in our Tertiary Geology.

I shall write to you again but this steamer mail is just going to close so I must stop for the present. After next letter you may be a long time of hearing from me.

Ever yours sincerely
James Hector.

12: Hector to Hooker, 15-10-1863

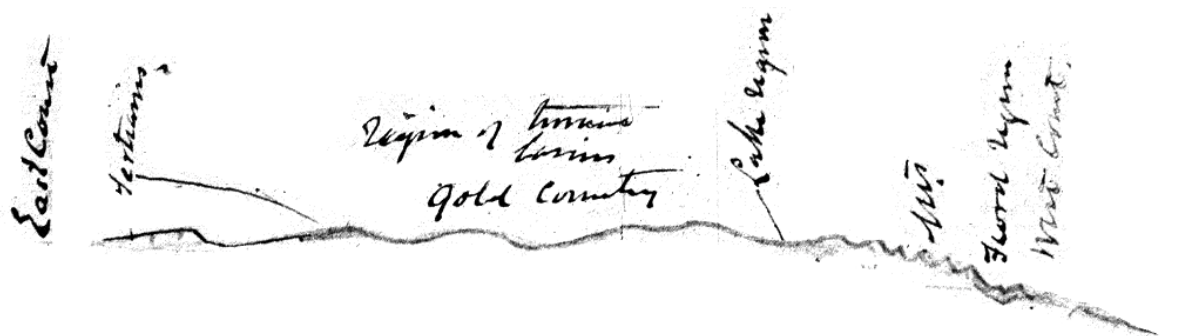
Kew DC 174, 416-417

ATL Micro-MS-Coll-16, 398-402

Dunedin
15th October 1863

My dear Hooker,

I have been away out of the world for 5 months & can hardly tell what kind of work I have done but having worked hard in a new field I suppose when looked on there must be some little real stuff to show. I hope you have received all the things I directed to be sent to you. You shall have another case or two in a few months, & I shall do all I can not to be the cause of delaying your much wished for Flora N.Z. by trying as soon as possible to send you a full set of the plants in the Province. As it has been winter I have not done much of course in your way on the West Coast (you will get an account of my expedition either by this mail or next, so I wont try to write you about it) – but I return again tomorrow & this time take Buchanan with me so you may look for a good collection of careful drawings of the Cryptograms made on the spot. I have collected plenty of lichen, but they are all in my yacht which I have left on the West Coast while I have come over the Mt. by a new & excellent pass to communicate with the Government here. She is being near the North boundary of the Province & I am now going to return South at once & will spend the longest time in Dusky Bay. I have now finished Milford Sound, Thompson & Doubtful Sounds, Preservation & Chalky Inlets, but unless you have a good map by you I need not attempt to explain this to you. Suffice to say that in all Glacial Valleys formed at a time when the district was elevated many thousand feet. The deep water in them is caused by the depression of these Mountain Valleys which are still undergoing subsidence at their heads but rising towards their seaward extentions i.e. the central part of the Mt chain is sinking & the flanks rising. It is just the positing up of the Earth's crust on either side of a Mesozoic cicatrix.



I have just had the time to glance at Lyells new book, but all I have seen appears to confirm his view of the strata of the Alpine Lakes by the elevation of the land at the lower extensions while the upper remains stationary or at least rises to a less extent.⁵ I have had no letters for the last five months & unfortunately on my arrival here I find they have been all sent south to Riverton on the South Coast in the vain hope of meeting me. I start again at once to recross the Mt. and expect to be back in Dunedin about the end of the year.

The Gold Fields are still doing well here and promise to continue their large yields for several years. We are going to have the first New Zealand Industrial Exhibition here in 1865. I send you some papers respecting it & am requested by my fellow commissioners to solicit your interest in its success. I have no doubt I shall be able to secure some fine spoils from it for your museum. I hope you get all the newspapers regularly as I trust greatly to your glancing over them as they generally contain some notice of my doings. I intend shortly to communicate an account of my journeys to to [sic] Geographical Society but not for some months.

In great haste as I have unexpectedly time to write by the mail.

Ever Yours Sincerely
James Hector.

13: Hector to Hooker, 16-1-1864

Kew DC 174, 418-419

ATL Micro-MS-Coll-16, 403-405

Dunedin
16th January 1864

My dear Hooker

I have just returned finally from my West Coast expedition, and only in time to send you a very short account of myself by this mail which closes to-morrow.

I have been absent on my cruise for eight months in all, but I wrote to you & sent an account of my proceedings in October last when I crossed the Mts. & spent a week in town. I then returned by the same route & rejoined my Yacht without difficulty. Since then I have

⁵ Charles Lyell, *Geological Evidences of the Antiquity of Man*, London, 1863.

been coasting to the South from the NW corner of the Province at the Awarua Bay, examining the various sounds that I did not previously visit. I took Buchanan with me when I returned & as there was little Geological novelty I have been devoting myself principally to the Botany. Unfortunately I had to return from want of supplies just as the best month (Janry.) for Flowering plants was commencing, but nonetheless I think we have made a pretty exhaustive gathering. The collection will be forwarded to you without delay as your promised "Flora" is looked for with great anticipation by every one here. I am disappointed on the whole with the botany of the West Coast, at least so far as the occurrence of novelty is concerned. Buchanan, who is a far better authority than I am says so too. It may be that you have never had good collections from the Eastern part of the Province and have therefore not been made aware of the specific similarity of the Flora on the East to that on the West Coast. There are but few species which occur in the West which are not also to be found in the primitive forrest around Dunedin, while there are many there that are wanting on the West Coast. Here however all similarity ends as the predominant species of the West Coast, but as regards forrest trees and small plants, are though present on the East Coast, very rare and restricted to local patches. On the other hand those which predominate on the East are equally rare on the West. Therefore though there has not been much added to the total flora of the Province yet the result as affecting the Geographical distribution is most interesting. I enclose some rough jottings concerning the different plants met with but you must accept them with caution as we may have made blunders. I can only promise you a more perfect account at a future opportunity but before you receive the specimens.

I have to acknowledge your letters of June & July. I am very glad to have the the[sic] plants so far as you have got the ---- satisfactory. What you ask for in the way of drawings of the *Cordylina* &c. I shall attend to.⁶ The Common Ti. or cabbage tree here is certainly different from any *Cordylina* you describe.

I am going to send you a museum set of the woods &c. of the Province. I have been accumulating a set for an exhibition (New Zealand Inter Colonial Exhibition to be held here in Janry. 1865) so I can easily do it for you.

The live shrubs I have been gathering together are getting on well & a mob of men are busy at work on the Botanic garden reserve – so I have no doubt we shall at some future day be glad to receive a return in kind. The big felted leaf *Ranunculus* has come up well with me from a root, but all the seeds have failed in every ones hands. I wish you could see it alive it is a noble sight when it covers whole miles of the Mt. sides.

I am quite well but as you may fancy a little busy. This year what with my survey, the museum, the Exhibition & an acclimatization society of which I am chairman I shall have to throw off my inherent laziness and work like a horse.

With kind regards to Sir William & to Mrs Hooker Ever Sincerely Yours
James Hector

[*Marginal note:*]

I enclose a Photo of our *Cordylina* & a drawing of the Flower in detail – better ones will follow. I am s-----.

⁶ Hooker to Hector, 16 June 1863, "Trunk specimens of the Cordylines with leaf & whole panicle would be most acceptable, it is almost impossible to make them out by Herbarium specimens or by young garden plants – sketches would be invaluable."

14: Hector to Hooker, 16-2-1864

Kew DC 174, 420-421

ATL Micro-MS-Coll-16, 405-412

Dunedin
16th February 1864

My dear Hooker,

I only need to write you shortly by this mail as the enclosures give all the information I have at present for you.

These are the notes referring to the West Coast Plants as prepared by Buchanan. The Plants themselves have been sent per Book Post by this same mail in two (2) packets. They contain 137 species of plants & generally 3 to 5 specimens of each.

The plants are numbered – the numbers referring to the List.

I hope they will be in time for publication in your book - & it is in order to secure this that I send them by Post.

I have retained plenty more specimens in case of accident & these will be forwarded by ship along with the specimens of woods &c. by an early opportunity.

In connection with the forthcoming Exhibition it is proposed to publish a series of essays descriptive of New Zealand, to frame our work for future reference. As one Essay is to be on the Economic Botany I would like to get the names of our plants as early as possible and any other Botanical limits you can give will be very acceptable.

I have just heard through Haast that you have received some of my p----- things safely. In all there has been sent to you

- 1 Case of East Coast Plants
- 1 Packet p. part of Alpines
- 1 Case of Interior plants & sketches.
- & by this mail
- 2 Packet of West Coast plants Including a fair addition to the Dunedin flora.

I have heard from you of the safe arrival of the two ----- m---- items.

With kind regards to all my friends I remain
Yours Truly
James Hector

By next mail you will receive a complete list of all the plants we have got in this province – using the numbers of previous lists when we do not know the names.

I enclose you a copy of a letter & enclosures which I sent to Owen in Febry. last.⁷ I have heard nothing of its fate. Can you inform me if any notice has been taken by him of it at any Society?

The curious point in the restoration is the row of abdominal ----- appendages which have never before been recognized. They supply a want in the mechanical arrangement of the skeleton which Hochstetter alludes to in his book. I believe the Photo. has reached England by other hands but it is curious that Owen should never have written me a line on the subject.

JH

15: Hector to Hooker, 18[?]-3-1864

Kew DC 174, 424

ATL Micro-MS-Coll-16, 413-415

Dunedin
18th[?] March 1864

My dear Hooker,

I enclose list of the West Coast mosses according to promise and the specimens themselves are sent by Book Post by this same mail.

Two packets of plants were sent by last mail which I trust you will receive all right.

I have nothing new to tell you this mail as I have been busy getting up a long report for our Provincial Council. It will contain an account of all I have been doing and a sketch of the results & will be printed in time for transporting by next mail.

I also enclose a set of photographs of our fossil plants that occur with the Brown Coal formation but at prest. cannot enter into the grounds I have for arriving at this age from Physical Geography. The only wood that occurs & I can make out distinctly is the Red Birch (*Fagus menziesii*). The bark & leaves are both very characteristic.

I have only just received all my back nos. of the Geological Journal & am quite surprised to find the progress which has been made in the theories of Tertiary erosion. It is a great nuisance being so ---- out of the world.

With kind regards
Ever Yours Sincerely
James Hector.

⁷ Hooker to Hector, 18 February 1865, "I wrote to Owen at once about your *Dinornis* letter & Photo – he answered that you would have received his answer ere yours arrived."

16: Hector to Hooker, 18-4-1864

Kew DC 174, 425-426

ATL Micro-MS-Coll-16, 416-418

Geological Survey Otago

Dunedin

18th April 1864

My dear Hooker,

By this mail you will receive a parcel containing 10 mosses that were omitted last month from the batch that were sent and also all the Liverworts &c. This closes the collections made during the last season, but there are still the seeds, and specimens of wood, to be sent to you. The latter must be well dried before we cut into them as I mean to reserve a set for our Exhibition. I am longing to get even an approximate list of the plants sent home as Dr. Munroe has undertaken to write the Essay on the Economic & Geographic Botany of the Middle Island & Rev. Will. Colenso (ominous name – but good for the publisher at present!!!) that of the North Island. I have promised to let Munroe have all the information that has been got by Buchanan & myself. I have drawn up a table of all the plants we know of & divided the Country into five districts & 4 zones of alt. Have classified these accordingly in the manner you have adopted for larger & more important areas

	Dunedin Dist.	Wairarapa Dist.	Wairarapa Dist.	Chatham Dist.	North Coast
			x x		x x x

Thus *Ranunculus Lyalli* means sub-alpine i.e. 4000[?] to 5000[?] ft.

Now you will see that I soon get fouled up in this work by the want of correct nomenclature & comparison of the species – but we must only make the attempt & improve on it after we get your book out. You will be surprised I am sure when you see the distinct botanical features of different parts of such a ----- small plain as this is.

I for a wonder got a copy of the Nat. Hist. Review – I fancy somehow you must have sent it – by last mail. It contained a most interesting notice of yours of the wonderful introduction that is going on of European plants & your well minted kick at us all out here for not attending to the subject more closely. I'll shew it to Buchanan & I am sure your general rebukes will make him jump at his traces as if it was levelled particularly at him.

The spread of the *Polygonum m-----*⁸ by Travers is most remarkable. Up on the Gold Fields the drays often pass --- & cut up temporarily in lines of road for a few months & then abandon it altogether for some better track – but even though this may occur 80 or 100 miles

⁸ Unrecognised.

from the nearest spot where introduced plants have been grown at the soil once broken by the wheels does not revert to grass but is seized on by this little plant so that the old trails are always marked as a dark red streak right over hill & dale.

I cant agree with Haast --- the house fly & driving away the Blue bottle or Blow fly. Both exist in Dunedin in incredible numbers & I believe however that it (or something else) drives away the sand flies – which is certainly a most merciful provision of nature.

By the way I have got several specimens of a carrion hawk that none of the settlers seem to know & yet this year it is very common. Can it be a stranger species attracted by the immense numbers of dead horses & bullocks that are scattered about in the roads to the Gold Fields. Originally there could have been nothing in N.Z. to support a bird of its habits. I am going to send home a case of bones to Sclater very soon. I fancy he thinks I have forgotten my promise – but it takes time to do anything in the Country. However I have nearly 200 bird[?] ---- prepared & about 50 of them set up. I shall be able to send home about 10 Kakapoes & 10 Kiwis. I have only two of the Tuka-wike⁹ or large Kiwis *Apteryx australis* but I may chance to get more of them yet. I have been going ----- in for analysis of our Brown coals & Freestone of late as the poor folks are wanting some worth for their money. A selection of the results is printing just now & you shall get a copy. By the way any time you are passing Stanfords Charing Cross could you kindly step in & order for me any book or books relating to the transport & acclimatisation of Plants & Animals. You might at the same time suggest to him that it would not be unpleasant for me to receive my Geol. & Geographical Journals & Nat. Hist. Reviews. I hear that Palliser has come back but he has not written to me. Sullivan is here now & for a while did not behave well, but he is improving again as I allow sheer necessity to act as his fly-wheel & so keep him steady. Haast writes me that you are pleased with Buchanan's collections & drawings & have been exhibiting the latter at the Phil. Soc.

With kind regards
Ever Yours Sincerely
James Hector.

[*Marginal note:*]

I have since been looking into the matter of the supposed New Hawk & now dont think he is a new comer at all he has been here all along. Unfortunately I have no list of the Birds of this Country.

[*Marginal note:*]

PS I have not yet succeeded in getting the P.O. stamps which Mrs Hooker wishes but have applied to head quarters about it & will get them in time I have no doubt, if they can be obtained. Pray give my compts. to Mrs Hooker & tell her that I say I am pleased to have a commission from her & will do all I can to obey her at any time.

[*Marginal note:*]

This is reopened as it was stupidly allowed to miss the mail. I have just received a whole lot of journals from Stanford by a private hand so you are relieved of that part of your commission for me.

⁹ Tokoeka, *Apteryx australis*.

17: Hector to Hooker, 17-5-1864
Kew DC 174, 427
ATL Micro-MS-Coll-10-16, 418-420

Dunedin
17th May 1864

My dear Hooker,

My last letter was allowed to miss the Post most stupidly last month so that you would receive a parcel containing a few mosses without any advice. I trust that you have received all the Parcels that have been sent by Book Post now as they contained the West Coast Plants.

In answer to your question about the absolute diff. of the E. & W. Coast flora I now enclose you a classified list.¹⁰ It is of course very imperfect as we don't know the names rightly. It is mainly all done by Buchanan who has laboured hard to make it as exact as possible.

When shall we have a list of Plants out & can we hope for your Book before the opening of the Exhibition? I have already told you that Munroe and Colenso are going to write essays on the Botany of N.Z. Haast Crawford & I write on the Geology & other authors will do for the other ----- of the subject.

The *Areca* does not come so far south as this & is limited almost to the Province of Nelson in this Island I believe.¹¹ I sent you some notes about the *Cordylines* two mails ago which I hope you received.

I am quite in a fog about the *Astelia* here – it is certainly a bisexual plant at least what I take to be the *Astelia* is so I enclose a part of a flower.¹²

I start in a few days for a six weeks tour of the other Provinces in order to drum up the folks to work for the Exhibition. It makes a nice trip for me. I shall visit the New diggings which have broken out in Nelson. It is very interesting. It has always puzzled me why the diggings have hitherto been confined to this Province.

Along with the enclosed list I send a map of the Province with the districts marked into where I have divided it. I also send you a photograph of a map I have brought out of the N.W. district which will serve to show you the cut of our Alpine regions. Also a page of a report that is passing through the Press as it relates to the Herbarium work. I shall be glad of a trip away just now as I have not been feeling altogether right. In confidence I may mention that the General Government have, or intend to propose engaging me as Geologist for the

¹⁰ Hooker to Hector, 18 January 1864, "I am anxious to know the absolute difference between the East & West Coast Floras of the Middle Island – but there is no need to collect all the common trees of the W. Coast; it is enough to note them carefully."

¹¹ Hooker to Hector, 18 January 1864, "Have you the *Areca* in Otago Province. Don't forget sexes of *Astelia* & notes upon *Cordylines*."

¹² Hooker to Hector, 22 July 1863, "Buchanan has sent valuable notes on the young states of several Otago species – ask him also to keep an eye to the sexes of *Astelia*."

whole colony in which case I shall not see you & other friends for many days to come. I have not yet succeeded in getting the stamps for Mrs. Hooker I am sorry to say –

Ever Yours Affectionately
James Hector.

PS [*Illegible: one line*]

18: Hector to Hooker, 7-6-1864

Kew DC 174, 428

ATL Micro-MS-Coll-10-16, 421-423

Auckland Club
7th June 1864

My dear Hooker,

I had to leave Dunedin just as the mail arrived so that I can only acknowledge Yours of Febry's date and the accompanying very welcome list of plants. I at once set Buchanan to work arranging & naming the plants that were returned, but as yet can make no comments. In glancing over your list however I did observe many interesting parts that will require comment to but reserve them for next mail.

I am wandering about N.Z. just now making the acquaintance of all the diff. Provinces for the first time, having obtained six weeks leave for the purpose of furthering the affairs of the Exhibition.

I am much struck with the differences in surface & Bot. features of N. & S. but accompanied by a unity of types & general resemblance far greater than could be observed throughout a similar range of Latitude either in Europe or America. The Gold discoveries are beginning to make some stir in the North parts of N.Z. but I don't believe much in them. The superficial strata here (i.e. N.) are there at 1800 to 2000 ft alt. further south (except where the dip & disturbance has been great) & this I believe is a sure indicate of the depth of the great Tertiary basins from the bottoms of which the Gold must be liberated in order to find rich alluvial diggings by the best drainage of the Country.

The War here engrosses all attention. It is a miserable & I fear bungled affair. The mode of proceeding against the Natives in the manner of European warfare is just using all of Naysmith's Steam hammers to drive tacks. I have not your note with me so can't reply to the enquiries it contains -----.

Yours Sincerely
James Hector.

19: Hector to Hooker, 15-7-1864

Kew DC 174, 429-430

ATL Micro-MS-Coll-10-16, 424-429

Christchurch
15th July 1864

My dear Hooker,

As I have been travelling about N.Z. I have not yet received my letters by either of the two last mails & so cannot answer them. I wrote you a few lines from Auckland acknowledging receipt of the lists of plants. Since then Buchanan has compared it with the plants and has sent me a few notes which I enclose.

I trust that by this time you have received the West Coast Plants which were sent by the Jany. & Feby. mails. – Also the Analyses of the Geographical distributions.

In answer to your enquiries – The *Areca sapida* does not occur in Otago, but I believe is found on Banks Peninsula and also at the mouth of the Grey on the West Coast. This having[?] it as high as Lat. 44° S. & very considerably above its S. American limit!! Dr. Munroe fancied from the Nelson specimens that *Cordyline indivisa* was always sessile, but both on our West Coast and near Auckland I have seen them with stems 12 ft high. All those I saw in the Nelson woods were however without stems. Can these be two similar species. The leaves also appeared diff. to me.

I shall send you full illustrations of *C. australis*. I have enjoyed my tour very much & have made acquaintance with many persons I only knew by name previously – such as Dr. Knight, Colenso, Travers, Haast &c. Travers is going home soon and I have no doubt that you will like him. He is a natural born botanist that has only lately discovered his vocation. And as he is rich & can afford the business you must secure him as a work man. Haast improves very much on acquaintance & is really a very good fellow on the whole. He is most indefatigable & has done lots of good work in the way of collecting and measuring sections. The excellence of his botanical work you will know. He shewed me some of the Proof sheets of your *Flora*. It is splendid & will be highly appreciated in this Colony as there are an unusual percentage of folk here that take an interest in Botany.

Haast asks me to tell you that he has not had time to write by this mail. We have been up country for a few days together looking at the structure of the plains where the rivers emerge on them from the Mts. Haast as I suppose you know goes in strongly for Glacier action, & has made some excellent observations, but his notions on the subject are very confused I think as he does not distinguish sufficiently between the extension of glaciers under existing conditions & their mode of operating when the features of the Mts. were different. Oscillations & Faultings have undoubtedly occurred in late Geological times & they must have aided & even over---- the Ice action in the formation of the Mt. valleys. I don't remember if I ever pointed out to you the relation of our great Lakes to the Sounds of the West Coast.



Here it is evident that rock bound basins have been formed on the East side and deep sounds on the West side of the Mt. by the whole mass of the Island having undergone depression at unequal rates – the West side sinking fastest. The original formation of the Valleys I have no doubt were formed by the erosion of glaciers along Anticlines & lines of fault.

My principal news this mail is that the General Govt. have asked me to organise & direct a permanent Geol. Survey of the whole of New Zealand on the same footing as in other Colonies, and that as I have agreed to do so I must give up all hope of returning to Europe for many years to come.

I think you will agree that this is right step on the part of Govt. so far as the principle is concerned, but whether they have pitched on the right man or not I wont venture to say. At any rate I will work hard to make New Z. what you predicted it should be, viz. a Geological Gauge on which we may measure the changes which Physical Geography has undergone in recent Geol. times, by a study of the recent fossils & the living animals & plants.

Already I begin to perceive that in the matter of shells there has been a gradual displacement of S. American (Miocene & Pliocene) forms by forms that are in the equivalent strata of Australia so that the littoral fauna of N.Z. were say in Miocene times, identical or nearly so with that of W. America but now it is almost Australian.

I return to Otago today in the mail steamer & if I have time after getting my letters & anything requires answer I shall write you a few lines. Now that I have seen the whole of New Zealand do you know that I think the South Island will be the greater Colony. The N. Island has all the natural advantages but the S. Island shows all the signs of active development. I fear very much they are going to break asunder as the miserable Maori question is dragging the whole into the mud while the S. Island has no interest in the matter whatever.

Pray tell Mrs. Hooker that I have never yet been able to get the Postage Stamps she wished – they must be very rare indeed but I do not despair yet.

Ever Yours affect. friend
James Hector.

Dr. Hooker
Kew.

20: Hector to Hooker, 14-8-1864

Kew DC 174, 431-432

ATL Micro-MS-Coll-10-16, 430-433

Inch Clutha
14th August 1864

My dear Hooker,

I have been suddenly obliged to take the field again before I had written my letters. I meant to have sent you several photographs &c. by this mail but cannot do so now. I was glad to learn by your last letter that the plants had all arrived. I shall send you the bulk of those sent by post in a box along with other things.

I enclose a small fern that Buchanan says is very rare – only in one spot near Dunedin – & which he does not know whether he has previously sent. It looks like a fern I have seen from the Chatham Is.

I can learn nothing of Antipodes Island, but I understand it does exist.¹³ If I can find out anything about it I will not forget your enquiry. I got a lot of specimens from Chatham Island lately & among them recognised rocks (grits &c.) identical with our old Tertiary (or perhaps Cretaceous) series that yield the Brown Coals.

I have every reason to expect that that formation indicates the last great Continental state of the Southern Hemisphere.

It must have been then occupied by land with gigantic forrests & mighty rivers. The great faults that have tilted the older rocks to form the N.Z. Southern Mts. have all been since then & the earliest of the volcanic rocks are of a still later date.



1. Slates. 2. Grits with Brown Coal & D----- Lavas[?]. 3. Clay with Eocene? fossils. 4. Calcareous Sandstone with Miocene & Pliocene fossils. 5. Volcanic rocks (Dolerites & the like). After 5 comes the epoch of the Moa.

This section serves for about any part of the province & you will see that the faulting of 1. must have begun after the deposit of 2, but before the deposit of 3 & 4. Then as 2 is grits & conglomerates (i.e. shore deposits) with bones, & is overlaid by clays & then by shell[?] sandstones it seems to indicate a gradual passage from Terrestrial to deep sea conditions & then a partial recovery or shoaling prior to the volcanic outbursts. This is only to be applied to faultings that have given form to the surface & dip to the various strata. In addition, just as I believe there was in America, there has been great alternating heavings of the land in mass. Is it possible that this may arise from the unequal retardation of the tides in the opp. hemisphere

¹³ Hooker to Hector, 19 May 1864, "When you write next tell me do "Antipodes Ilds", exist anywhere but in the charts."

at diff. periods & be therefore a change of the mean level of the ocean & not an alteration in the radial distance of the Earth's surface at the plane.

I think I told you last mail that the General Govt. have asked me to remain in N.Z. to organise a Geol. Survey of the whole Colony. It will be many months here before I transfer to my new masters. I am away now to the South Coast where there is a thickly bushed & almost unknown Country. I have a lot of paper with me but it is too early for anything but the orchids. I am going in a whale boat with three hands & expect to be gone 4 weeks. Folks say I run great risk but I find they generally overestimate the things they have not tried. I am longing for your book in common with many other folks. You seem to have got on with it at a great pace if you are at Graminiae.

Ever Yours Sincerely
James Hector.

I have ---- yet been able to get the P. Stamps for Mrs. Hooker.

I have just got yours of Apr. 19. Glad to hear that the W.C. things have reached you. The list that was sent represents the Flora, but many things were not collected.

21: Hector to Hooker, 17-10-1864

Kew DC 174, 433

ATL Micro-MS-Coll-10-16, 434-436

Dunedin
17th October 1864

My dear Hooker,

I have been away exploring the S.E. Coast during the last two months nearly so that I did not write by either of the two last mails. I hope we will soon have the Handbook out now as by your last letter I see you had nearly finished it. I got nothing in the South to send to you as it was the winter season. It is a densely bushed country & I dare say will yield some novelties as there is a marked difference in the proportional character of the forest trees from the woods of either the West or East Coasts. The most characteristic tree is the *Weinmannia* (sp.?) which they call here White Birch (which however is also applied to *Fagus solandri*). It is a large tree with very red wood. It is very rare in the East Coast Bush, but pretty common on the West. *Fagus* however undoubtedly predominates on the West Coast, while on the East Coast the most plentiful trees are *Podocarpus* & *Dacrydium*. Dr. Munroe is writing an essay on the Geog. Botany of the S. Island & will be able to bring out all these curious facts of distribution as a basis for your future speculations. I long to see a S. Hemisphere Essay from you like that on the Arctic Circle Flora. You will find it necessary however to take up the Fossil Flora though & I remember your horror of determining species of plantites.

How is the glacier war getting on. Haast writes me that he has sent home a paper on the subject. I can see no two opinions as to the Ancient Glacier active here. It has been down to the greater elevation of the Land & not to any great refrigeration of the globe. I am very

busy just now with the Exhibition which is to be opened in two months. Things are beginning to come in & the Building is finished. I hope you got the Photographs that were sent 2 mails since.

Ever Sincerely Yours
James Hector.

Dr. Hooker.

22: Hector to Hooker, 15-11-1864
Kew DC 174, 434-437
ATL Micro-MS-Coll-10-16, 437-448

Dunedin
15th November 1864

My dear Hooker,

Many thanks for your letter by last mail (July). The lists you refer to have all arrived & were very acceptable. I am glad you like the tabulated list of the plants & the areas they occupy. We took great care in making it up – but of course after we get the Handbook will be able to make it much more perfect. Colenso has just sent me the maps of an essay on the Botany of the North Island (99 pp. !!) & from it I see I shall be able to construct a similar list for the N. Island. His essay gives a great deal of information about the uses the Native plants have been put to by the Maories. Munroe & Travers have also sent in valuable essays on the Botany of Nelson & Canterbury & I have drawn up a little account with a Phytological section of this province.

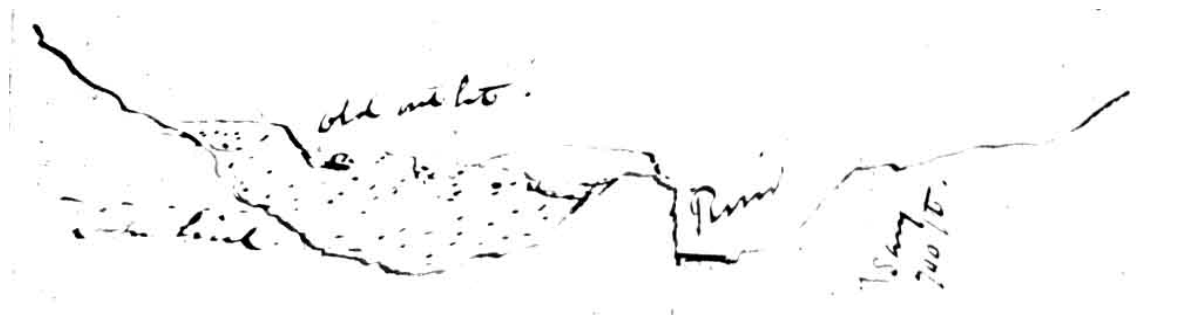
I have been hard at work getting out a Geological map of the whole of N.Z. which is to embody all that is at present known & illustrate those Essays by Crawford (aided by Mantell) Haast & myself.

It will be ready soon now. I am also getting out a large scale map of this province. I enclose a Photo: of a part of it. The scale is 4 miles to the inch. It is quite finished now all but the Geol: colouring & lettering. While I am working up for the Exhibition I am gradually at the same time winding up my affairs in this Province. When I leave this in a few months I shall leave behind a Capital little museum containing over 3,000 Rock & Fossil specimens, all worked up & Catalogued for reference. Also 90 or 100 birds of the Province all set up (I have besides about 200 species ready to send home). A full set of all the woods polished & named with specimens of Flowers & leaves. About 50 of the more interesting of the fishes and a lot of the odds & ends.

This collection is already in handsome Cases made of polished Rimu (*Dacrydium cupressinum*) which is a most handsome furniture wood. Then thanks to you I will be able to leave them a trustworthy Herbarium just as good as if the plants had been named directly by you – for I have adhered most scrupulously to the system of numbers.

Haast has recently sent me a copy of a paper which he sent home to the Geol: Soc. last mail, in which he goes in altogether for the scooping action of glaciers.¹⁴ You will have seen it by this time I dare say. I think much of his argument is very shaky. The only point I can see in it is the c----- that after a Lake forms at the lower end of a Glacier, the Ice may perhaps melt with greater rapidity than before & therefore without any great change of climate return so rapidly as to leave a gap between the moraine & the part where the slope of the Valley again lifts the Ice out of the water so that it melts more slowly & therefore has time to lay down a second moraine. There is something in this I think.

Our great Lakes are certainly in rock basins. That of the Wakatipu Lake is at best 1200 ft deeper than the lip over which the water escapes. However there is a part which I have not seen noticed any where though perhaps it may be familiar to you. Viz. that a river will sooner lower its drainage channel by cutting through solid rock, then it can remove shingle which has dammed its first out let. The result is that nearly all our Lakes have the following section at the out let.



Sometimes the old & new outlet are side by side, as see Photo: of sketch enclosed (No. 1) which is a view from a Mt. 7000 ft above the level of the Lake. No. 2 is a side view of the same outlets from another Mt. & No. 3 is the reverse view from No. 1 showing the wonderful terracing which has been caused by the gradual lowering of the bed of the river as it cut through a rock channel.

In the case of the Wakatipu Lake however the old & new outlets are 20 miles apart & the change has caused the drainage to reach the sea in a Easterly direction by the Clutha River instead of S.W. as before by the Mataura (see back of the Photographic map.).

I also send you three views of this Lake.

I also must again mention to you the relation which the sounds of the West Coast bear to these rock bound Lakes – because I believe that their structure gives the clue to this difficulty.

I send a few sketches of Milford Sound where the Phenomena are best marked. What ever may have led to the original formation of this wonderful vally there is no doubt but that it has been finished off by Ice action & that phenomenon indicated on the back of Sketch No. 7 & on No. 8 of Lattoral vallies having been cut off apparently by erosive action being

¹⁴ Julius Haast, 'Notes on the causes which led to the excavation of deep lake-basins in hard rocks in the Southern Alps of New Zealand' & 'Notes to a sketch-map of the Province of Canterbury, New Zealand, showing the glaciation during the Pleistocene and Recent Periods as far as explored', *Quarterly Journal Geological Society London*, 1865, 21, pp. 130-137.

prolonged in the main valley after it had ceased in the tributary valley is very curious & is the most direct proof I can advance of erosion of valleys by Ice. Hence it proves nothing towards a scooping action. I believe the valleys occupied by Sounds in the West & by Lakes in the East have all been formed in the same manner, & that the ----- the former were occupied by arms of the sea & the latter by rock hemmed Lakes having a surface altitude of 1000 ft. is simply a result of a tilt or inequality in the relative rate of submergence following a great elevation of the flanks of the Crystalline axis.



The Augt. Mail has just arrived in time for me to acknowledge receipt of the copy of the Handbook for which many & ----- thanks. Buchanan is ----- it at present but I have not had time to look at it yet. It seems to be very nicely got up. There may be a letter from you but the whole of the mail has not yet been delivered. I see a notice of the Brit. Assoc. meeting in the Paper & of Lyell's address. I like his idea of the decrease in size of the Swiss Alpine Glaciers from the climate of the Sulic--- Plateau. In N.Z. you are of course aware that we have occasional hot dry winds for several days from the N.W. They dry up everything just like the Australian Hot Winds & cause most violent floods by melting the snows in the Mts. along the west.

There can be little doubt that notwithstanding the great distance from Australia this hot wind here has some connection with the desiccation of the air that passes over Australia. Therefore if the Australian Country has been raised in latter Tertiary times, while at the same time the N.Z. Alps decreased in altitude we would have the same causes opportuning to reduce the extent of the Glaciers as those alluded to by Lyell.

I am very busy now with the Exhibition which opens in about 5 weeks. We begin taking in articles today. Owing to squabbles with the Local Govt. we are six weeks behind time, but I hope we will yet be able to get through the work. I enclose you a Photo: of the part of the town that has the building taken from my office door.

I also send you a Photo: of Buchanan. If it had not been for the Exhibition I should have had him out collecting this summer. I am certain that there are lots of Alpines yet. I was comparing notes with Haast as to plants which we got on the Wanaka Ranges at different dates & he remarked that I had got many in Febry. that he failed to find in Decr. That no collection has been made above 7500 ft I am sure that at the right season plants will be found to 9500 ft.

Ever Your Sincere friend
James Hector.
Dr. Hooker
Kew.

23: Hector to Hooker, 18-1-1865
Kew DC 174, 438
ATL Micro-MS-Coll-10-16, 449-451

Dunedin
18th January 1865

My dear Hooker,

I have been so much occupied & I may say overworked with the preparation of the N.Z. Exhibition which is at last open, that I have not had time to fulfil my promise of sending you notes about your Handbook. I am now with Buchanans help arranging a complete herbarium to be used with it & to be lodged in the museum which I have scraped together & as we go on I shall make the notes & send them by next mail. There is not much however to correct.

The exhibition gives great satisfaction & is considered a success. The Governor played us all in the South a most shabby trick in changing his mind at the last moment without notice & not coming to open the exhibition in person. All the great Balls Dinners &c. that were prepared for his reception went off very flat of course & the good folks both here & in Canterbury are very wroth.

The Exhibition has kept me in town & has made me lose the best of the collecting season. However as soon as I can get away I mean to have one true ---- in the Mts. before I leave the Province as I feel sure that we have nothing like a complete collection of Alpines. Besides I will not be sorry to get away for a while as I feel very fagged.

I still think the Colonial Government are prepared to adhere to their arrangement with me for a General Geological Survey, in which case it may be long before I again turn up at Kew & have the pleasure visiting you again. With kind regards to all my friends.

Ever Yours Sincerely
James Hector

Dr Hooker

I send you an uncorrected proof of the Catalogue which I have just got from the printers.

24: Hector to Hooker, 15-2-1865
Kew DC 174, 439-440
ATL Micro-MS-Coll-10-16, 452-454

Dunedin
15th February 1865

My dear Hooker,

According to promise I send you some notes concerning various points in your "Handbook" which I have made with Buchanan's assistance. We have now a complete (or nearly so) Flora of the Province classed & named according to the "Handbook" so that the good folks here may have an opportunity of studying your valuable work with practical illustrations. I hope that plenty copies will soon arrive in the Colony as there are a great number of people that take an interest in Botany who will get on well with such an excellent guide as it affords.

I wrote you that I was bringing out a volume of Essays on various subjects connected with New Zealand. I[t] should have been out before now but several causes have led to the delay – one being the destruction of the Printers' premises by fire some time ago. None of the Mss. was lost however I am glad to say – only some of the Lithographic Stone with Illustrations.

By last mail I sent you accounts of the opening of the New Zealand Exhibition so that I hope you take a little interest in its success. The English & Indian Exhibits have now arrived so that the Exhibition is complete. It is daily growing in favour & becoming popular & is really well worth careful study. It is unlike all other Southern Colonial Exhibitions ----- in being less dependent for its success & interest on merely imported articles, as its principal feature consists in the display of the Raw Products of the country – so that it has rather the character of a Museum than an Exhibition. At the time when we close it (in a few months) I will then be an officer of the General Govt. & I shall have a splendid opportunity of securing a fine collection for a Colonial Museum.

By this mail you will receive a copy of the 1st Edition of the Catalogue & perhaps also a copy of the 2nd Edition which contains a great deal more material. In case the latter should not be ready I have put a slip with the list of my birds in the copy of the first ed. which I send. Will you kindly let Sclater see it when you are done with it. Buller who helped me to make up the list is a capital ornithologist & has more acquaintance with N.Z. Birds than any one perhaps. He is preparing a handbook of them. He finds some four or five New Species in my collection but not having the books by him for reference, has only ventured to name one of them in the mean time. I have given him all my notes & he is going to send a paper to the Linnean Soc. or Zool. Soc. on the subject.

I have duplicates of nearly all the birds in the list, which I shall send home soon.

Is there any one at work in the mosses at home? You know I suppose that Dr. Knight is bringing out a monograph of the N.Z. ones. Shall I let him have all Buchanans? B. finds he has nearly twice as many as those which are exhibited by Dr. Knight for the N. Island.

I send you some Photographs of the interior of the Exhibition which have been very hurriedly done. By next mail I shall send better ones. Please to show them about. I am longing to get out of town & to have a little field work now as I am rather knocked up.

With kind regards to Sir William & all friends
Believe me
My dear Hooker
Ever Yours Sincerely
James Hector. .

Additional notes on Flora

p. 175 Under *Gaultheria rupestris* for "Eaten by Ground Parrots" read Eaten by Kakapo or tree Parrots.

p. 208 under *Veronica vernicosa* for "Dun Mt" read Dunedin Mts.
There is no Dun Mt. in Otago so it must be a mistake of Dr. L. Lindsay. The Plant is common anywhere in Otago to the sea level.

25: Hector to Hooker, 15-3-1865

Kew DC 174, 441
ATL Micro-MS-Coll-10-16, 454-455

[Dunedin?]
15th March 1865

My dear Hooker,

I am obliged to leave today for Wellington in a hurry before the English mail has so that I can only send you a short note to say that I am all right and hope to be transferred to the General Govt. service next month. It is this matter that takes me North at present.

I hope you have received all the papers, Photographs &c. about the Exhibition. By this mail I send a more complete edition of the official Catalogue.

I also send a copy of todays newspaper as it has a leader on a very important suggestion with regards to obtaining reliable & comparative accounts of the various Gold Fields that have been worked within the last few years.¹⁵

I enclose some notes of Buchanans' about *Cordyline*. I have looked over them & can subscribe to all he says so far as I know about the subject. The drawings are Capital.

In great haste
Ever Yours Sincerely
James Hector.

¹⁵ 'Gold Mining: Its History and its Modes', reproduced in the *Otago Witness* (from the *Daily Times* March 15), 18 March 1865, p. 1.

26: Hector to Hooker, 17-4-1865
Kew DC 174, 442-443
ATL Micro-MS-Coll-10-16, 456-458

Geological Survey of New Zealand
Adress in future Wellington
Dunedin
17th April 1865

My dear Hooker,

I am still down here though my head quarters are soon in Wellington at the seat of Government where I am to establish a Colonial Museum – but until the close of the Exhibition I cannot leave this. I have taken Buchanan over to the new service & shall set him to work in some part of the North Island next spring if the Native war will allow of it, if not he will accompany me to the Kaikora Mts. an Isolated range of 8,000 on the N.E. corner of the Middle Island. They are snow capped & have never been at all examined either Geologically or Botanically. For the past month I have had Buchanan hard at work on the Fossil Flora & we have made out a great variety of different plants now. There are evidently two distinct sets of Coal-bearing beds probably separated by marine strata. In the upper dicotyledonous leaves are abundant imbedded in sandstones & associated with abundant remains of a long branching plant with rigid leaves like an *Araucaria* except that they are blunt. These leaves seem also to occur in the Upper Carbonaceous Strata in Australia judging from Photographs I have, but they have been called *Zamites* by McCoy. I enclose a lot of pencil outlines in the meantime, but I must try & get the accurate drawings published & named if --- merely for the identification of the Strata without considering the fossil botany at all. I have now collections of these plants before me from every part of New Zealand & the way that the same plants turn up in similar beds from far distant localities is very wonderful & leads me to suppose that we are dealing with detached outlines of extensive formations & not with local & detached basins which is the usual manner of occurrence of Tertiary & Upper Secondary Coals.

[see diagram on next page]

You may see that this section is very puzzling the upper beds of the lower formations being the most disturbed. I have marked the tracings of the plant with the letters of the section so that it will at least help you to form an opinion as to the supposed difference of time between the two types of vegetation. Hitherto all those Coal strata have been put down as Tertiary in Otago - & Cretaceous in Nelson. I think I can prove both set of formations to be identical & that a part of the Otago Formation is much older.

I once sent you drawings of some of the fossils before I think & if you call at M----- street you can see the drawings of the Shells – or rather Photographs of them. I sent 55 Photos of fossils there in March 1864. On looking over the drawings I was going to enclose I find I have made a mistake in naming some of the localities & as there is not time to rectify it before the mail closes I will defer sending them till next mail.

Ever Yours Sincerely
James Hector.

Next mail I shall send a clear ----- of all I know of our Fossil Plants & Coal Beds.

27: Hector to Hooker, 17-5-1865
Kew DC 174, 444-454
ATL Micro-MS-Coll-10-16, 458-468

Geological Survey of New Zealand
Dunedin
17th May 1865

My dear Hooker,

Last mail was very late, but I duly received your very interesting note acknowledging receipt of the sections, views & Theories I sent you & which I am rejoiced to think find favour in your eyes.¹⁶ There is not the slightest hope of disproving the existence of true rock basins on the Eastern slope of the Mt. I can point you out dozens. By next mail you shall have a tracing of a map I am preparing to prove this. So many of these basins are now drained completely through gorges, being terraced depressions the lips of which can be satisfactorily determined to be rock all round at a higher level than the Gorge outlet, that I have no doubt in the subject. All these rock depressions have saddles or Colls "Land straits" of Darwin that lead through valleys with terraced slopes & these saddles have a general elevation of 1800 ft. above the sea. In reply to your questions about the Wakatipu Lake as to the nature of the barrier across its Ancient out let at the Southern end. The width of the lake gives an accurate notion of the width & shape of the valley as the shores are every where rocky, except at the lower or S. end (ancient out let). Here the valley is barred by Terraces on the top of which rest large erratics. These terraces rise 170 ft above the level of the Lake and extend in the length of the vally – sloping not to the Lake but to the South for 7 miles before they reach the level of the Water of the Lake. Here the Mataura river "cuts into" the vally from the Mts. on the West & adapts the vally for itself. It has evidently at one time been a tributary of the ancient river that drained the Lake. But in the course of 10 miles the bed of the Mataura River changes from Shingle (the depth of which as you hint is unknown) to one of rock the stream flowing over rocky ledges. The level of this rock lip is only about 300 ft. below the lake or 500 ft. below the top of the Terraces, or 900 ft. above the sea level. All the way down to the point where the ledges cross the vally it is clearly deformed & bounded by Mountains 3,000 to 4,000 ft altitude. So that I see here in that case no escape from the conclusion that it is a true rock basin.

Cross-section of river and mountains, see next page

I believe however that the whole thing can be explained by the tilting & after all a very slight amount is necessary & when it is drawn on a natural scale the eye almost jumps to the conclusion that the high Mt. masses must collapse to quite a sufficient extent at the expense of the flanking & lower districts especially during a process of general subsidence, which after all can only arrive from the withdrawal of the form of the elevated.

¹⁶ Hooker to Hector, 18 February 1865, "I follow you much better in your advocacy of Rock basins in your West Coast loch & sound comparison reasoning etc. observations & photographs which interest me Excessively. The tilting theory I quite expect will prove the key to it all, & is I suspect your grandest discovery."

Brown Coal Formation is inferior in stratigraphical position to extensive deposits of Marine Calcareous & Arenaceous strata containing abundance of Fossils which I believe can be divided into three groups by Lyell's system of percentage of extinct species (I have now collected over 200 species of the Coast shells but until we have more of them we cant infer much from the Fossils). It was ---- the "Upper" !! of the marine strata which from the fossils are certainly tertiary – (probably the newer Pliocene of the S. Hemisphere) that the Reptilian - --- & sent to Owen & named by him *Plesiosaurus australis* was said to come. This is undoubted as I have it from Haast & also another good observer. This stratum is full of Cetacean bones & I fear that as the specimens wandered about to Sidney[?] & else where before they reached Owens' hands they may have been mistaken & others substitution by accident. At least that is far more likely than that Oolitic Reptiles lived in the N.Z. seas during the period of the Cray[?]. However there is no saying – but the matter shall be looked into at once. To return from this digression.

It is through these Marine Tertiaries & overlying them that all our Doleritic lavas came. The period of greatest depression in Tertiary times having marked the outburst of submarine & subaerial Volcanic activity. You will see the general arrangement from a little section I have given on sheets 1 & 2 of the Fossils.

There is coal exhibited from various other parts of New Zealand with the same fossils or otherwise of undoubtedly the same age as formations from Drury & the Waikato Basin in Auckland Province & from Whanganui in Nelson. Also from Marlborough, Canterbury & Southland. It is in the latter Province perhaps that the most extensive area of this formation occurs. A curious feature is that right in the heart of the thickest seams of pure coal there occurs isolated & single pebbles of Quartz always well water worn & often as large as a goose egg. They do not form layers or occur in natural partings of the coal. There is rarely any trace of woody strata in the coal, but some of the seams contain abundance of a fossil resin – "Retinite or Ozokerite". This also occurs in a newer lignite formation which I have not mentioned as it is very local & has been found in lakes the boundaries of which are still evident – there having been no change their ---- drainage. In these lignite beds Fossil wood is abundant & in some cases is clearly of a *Fagus* marked on the bark like *F. menziesii*. I have not figured anything from these beds. There is a strong possibility that under the Formation A. I may include two different classes of Carbonaceous deposits, viz. those of the inter--- basins & those of the great East Coast deposits, but it is not unlikely that the differences in character which they present arise more from the nature of the circumstances under which they were deposited than from a difference in time & that they will belong to one great period during which there was a smothering up of the vegetation during the gradual depression of the Earlier Tertiary Continent? to name[?] the later marine tertiary strata.

Formation B.

The lower surface of A. is every where resting unconformably & such junctions may be got with all kinds of underlying rocks. The line of junction is generally either a clean washed or ferruginous Quartz gravel, or a regular "Dust Bed" (Soil?). The thickness of the Formation above this I estimate at 2,000 ft. The ----- appeared to a passage into the Formation A. is into a group of Septarian clays i.e. argillaceous beds with Ironstone – calcareous concretions. Fossils are rare in these beds & are principally Foraminifera & a few minute but beautiful spiral ----- that look exactly like McCoy's Eocene Fossils of Victoria. Under these Septarian clays (see section sheet II) comes Formation B consisting of sandstone – often ferruginous conglomerates – the pebbles being of fragments of fossil stone s------. These strata form high ranges of hills & in Otago are inclined from 15° to 30° degrees.

The localities from which fossils are figured are

Shag Point (so called after the Shag or Cormorant) Otago. 40 M. North of Dunedin. From Micaceous Sandstone that underlies & overly the Coal seams that are worked in the Ferruginous sandstone are a few shells, Cyperina, Trigonina?, Monotis, Terebratula &c. so that the Formation is probably Upper Mesozoic. I am sure you will be struck by the resemblance that some of the fossil plants bear to those I brought from Nanaimo – Vancouver Island & the shells have the same resemblance, so that I conclude it is part of a great littoral formation that was formed round the shore of the later Mesozoic Pacific Ocean. I think it corresponds to Selwyn's upper Carbonaceous system of Victoria, & to the upper Carbon bearing beds of Darwin's Cretaceous-Oolite system of S. America. The specimens I have from Shag pt. are very numerous, perhaps over 400 – but none are very good. I have packed up a case of the best for you, but the first opportunity I will have some of their long branching stems systematically chiseled out on the spot. The coal from Shag Point contains 7 to 10 [%] of water of constitution & a large percentage of Gaseous matter. It corresponds to Percy's "Pitch Coal" & from the above percentage of water must be classed as a Brown Coal. The seams rest like those of Vancouver Island – between beds of Sandstone & in this formation generally there is only a small proportion of Argillaceous matter. There is never the least trace of woody matter in the coal nor do I think of resin. It is this coal that contains the 4% of Sulphur so curiously combined as remarked by Percy, so as to resemble the manner in which that element enters into the composition of animal rather than vegetable traces[?]. The Shag Point Coal may be likened to the true Cannel coal or Torbanic hill mineral of Secondary formations.

The Fossils figured from the Coal strata at Pakawau in the Province of Nelson prove to be the same as those from Shag Point with out exception. The formation there belongs to the extensive group of Coal bearing strata that occur along the West Coast of the Northern half of the Middle Island. The Coal is of much the same quality as that from Shag Point except that it contains less proportion of Hydrocarbons & of water.

It is very probable from what has been published by Haast & others, that it cant be proved by any specimens sent to the Exhibition that at least a portion of the Buller & Grey Coal Field of the West Coast of Nelson also belong to this series. But all of the Coal that has come from there is of superior quality to the above, ranging from 1 to 2 % of water of constitution. How far may this be due to the nature of the c---- sandstones which at the Buller & Grey are Quartzose Granitic & almost crystalline. Elsewhere they are Felsitic.

From the Bay of Islands also Coal has been sent of the quality that would place it with this series, but no fossils accompanied it.

In Otago, ----- at Shag Point it also occurs on the S. West Coast at Preservation Inlet.

You will observe that the fossils of this series embrace Dicotyledon leaves, Ferns? & a lot of non-d----- among which is the long branched plant (Voltzia?) the leaves of which must have been rigid & ----ting like those of *Auricaria imbricata*.

Formation C.

Probably lower Mesozoic. Unless some of the great Coal seams of the Buller & Grey should prove to belong to this formation, the coal seams in it are very thin & variable.

Which is just the reverse of what occurs in Australia where it is the lower deposits that contain the thickest beds of coal. In Otago they have only been met with at Waikara on the South East Coast, occupying a more or less continuous band in a north westerly & there a Northerly direction right through the Island to the West Coast., lying between the Schistose Formation in the East & the Crystalline rocks on the West. The presence of this formation is not p----- throughout this district by the carbon beds however, but by other fossils & lithological character. The Carbonaceous strata are in fact only a small part of an extensive formation, the upper part of which is characterised by Ammonites, Belemnites, Inoceramus, Modiola, Trigonia &c. The ----- by Plant beds with fossil wood of ----- trees the internal structure of which has quite disappeared and by the presence of Ferns, such as Pecopteris, Taeniopteris, Glossopteris and the curious fossil that I long ago sent to you as Zamites. The strata are Sandstone & indurated shales, the plant beds & coal seams being always underlaid by heavy conglomerate beds, the pebbles in which are exclusively of Crystalline rocks (Granites & Porphyries). They lie at all angles from nearly flat to vertical. The coal contains from 1 to 4 p.c. of water – but varies much in the proportion of ash. The conglomerates bear a strong resemblance to those of the old Devonian Zone that encircles the Crystalline ----- of Scotland & have ----- been found on a very different shore line from those of Formation B. But are they really of different epochs? There is certainly no intermixture of the fossils indicated by any of the collections that have been sent to the Exhibition.

The Fossils from Canterbury are from the Malvern Hills a locality of Haast's who considers the strata there to be truly carboniferous. You will perceive however that the plants are the same as my Waikawa ones. His principal ground for assuming for them a Palaeozoic age is because in similar lithological beds he gets spiriferae (or spirigerae?) & other shells considered to be Palaeozoic by McCoy. But I suspect that those fossils will yet be included with those for the Richmond sandstones in Nelson & which probably form the lowest (or th-- -- I have had to mention) group of this Lower Mesozoic Formation. However all our older Formations are very o----- & I find for instance that strata forming parts of old clay slate & mica schist ranges in the Wakatipu Lake district yield fossils that are the same as those from the Richmond sandstone i.e. Triassic. I don't wish to speak positively on the subject.

I enclose some notes about the Moa bones that were shown in the Exhibition and some tracings of drawings of them which I thought possessed novelty or interest. Will you kindly put them in some one's hands who will look into them & who will return me the duplicate tracings named with even a tenth part of your usual promptitude for that I cannot expect from anyone but yourself. Haast is away round on the West Coast at the new diggings just now. By next mail I shall be sending home a complete Geological map of New Zealand to Keith Johnston for Publication. I have filled up the corners with figures of our principal fossils like those on Forbes' Geol. map of the Brit. Isles. in the big Physical atlas. It is to be the first work issued from my new Department as per heading to the paper I write on. By the way I hope you will remember that after this month I am in Wellington. You will see by the paper that the Exhibition is now closed & has ended successfully so far as finances is concerned. The goods are gradually dribbling away & I am grabbing all Natural History specimens for the Colonial Museum at Wellington. It is very hard that I shall have to leave all my collections from Otago behind me. I have a box of Birds packed for sending home. 130 specimens. But of course all my best specimens I had set up for the Exhibition & now they will all fall into the hands of the Provincial Museum. It's very hard as I am quite certain that there are at least 3 unpublished species & 8 or 10 more that have only been named & described from single specimens. I have made up a detailed list to be published with the

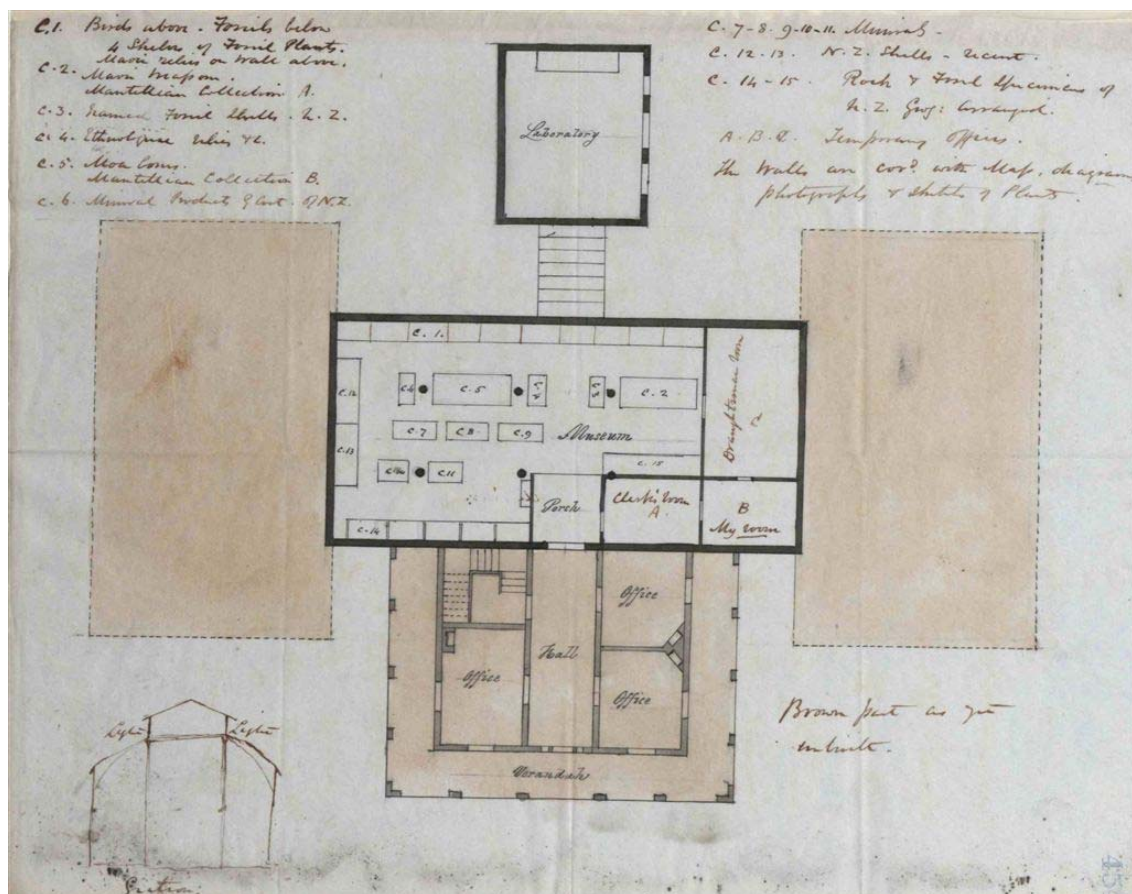
Jurors' Reports which are nearly ready for the press. Buller (an F.L.S.) helped me with the list. He is well up in N.Z. ornithology. I will be glad in answer to your enquiry – to become an F.L.S. if you think me worthy. I would like much to get the *Transactions*. But what I care most to be when-ever I have worked hard enough to deserve it is F.R.S. But that honour hardly looms ahead yet. I am very sorry that I cannot get leave for a trip just now – but I must do without. With kind regards to your Father & to Mrs. Hooker, for whom I have n---- been able to get the stamps,

Believe me ever yours affectionately
James Hector.

What has come over the consignment of your Handbook. Folks are worrying for copies & my own is getting quite worn out with the use that that [sic] is on it Mantell writes me that he has not seen it yet.

I enclose an abstract of the analysis of the various coals. It may help you to understand their relative value.

I send you a sight of Buller's Essay in Proof. You can show it to Sclater but of course no use can be made of it till published.



28: Hector to Hooker, 24-5-1865

Kew DC 174, 455

ATL Micro-MS-Coll-10-16, 469

Dunedin
24th May 1865

My dear Hooker,

I beg to introduce my friend Mr. Douglas who is going home with his family on a visit to the "Old Country."

I give him this note, as if he visits Kew I am sure you will be glad to see him as he can tell you all about this Colony – having been for a long time, the principal Bank Manager here, & being one of my greatest friends he can moreover tell you all about my doings & prospects. I sent you a huge packet by last mail which I hope you will receive in good order.

Ever Yours Sincerely
James Hector

Dr. J.D. Hooker, FRS
Royal Bot. Gardens
Kew.

29: Hector to Hooker, 16-6-1865

Kew DC 174, 456-458

ATL Micro-MS-Coll-10-16, 470-473

Geological Survey of New Zealand
Dunedin
16th June 1865

My dear Hooker,

In your last letter you say you will be glad to propose any one I recommend for F.L.S.¹⁷ I will take advantage of your kind offer for myself & for John Buchanan. I think he quite deserves it as he has worked very hard. What are the Fees? If elected you can apply to Stanford – Charing Cross for them. By the way I am in rather an awkward scrape. In printing off Colenso's Essay I put F.L.S. after his name. I don't know why but I fancied he was a very old member of the Society. He writes me that he was not aware of his having been elected but that he expects that he is by this time – I really hope he is as I have 1,000 copies of the Essay printed off with the letters F.L.S. after his name.

¹⁷ Hooker to Hector, 18 February 1865, "If any of your folk can afford F.L.S. I shall gladly see to their elections."

Might I ask you to propose him if you have not done so. I am certain he will feel it to be a great compliment & a recognition of his services in the cause of Botany.

I hope you will have received all the tracings of the fossil plants before this reaches you. They were sent by last mail. If you see your way to naming any of them please send the duplicate tracings with the names to Wellington which will be my future adress.

I have now a complete set of drawings of all the organic remains that have yet been found in New Zealand & I only wish I knew how to get them described & published. I have always planned my work as if I were to get home & take it with me for publication so that remaining out here puts me in a very disadvantageous position in that respect.

I have a curious theory about the cause of (Geologically speaking) – temporary[?] alternate submergence of the N. & S. Hemispheres sketched out for you but I wont send it by this mail, as I want to think a little more about it. It occurred to me more than 2 years since but I am so badly off for Books out here that I could not refer to what others have said on the subject. By the way I wish when any book comes out that you think I should see, if you happen to be passing Stanford's just give him a note[?] to send it to me by Book Post. I have ordered the Quarterly Journal of Science from seeing one number with a sheet ----- of your *Flora N.Z.* Is it to be considered reliable? I thought the discussions very good.

When are copies of the *Flora N.Z.* coming out for the market. My copy is nearly worn out with the constant thrashing of borrowers. I am sure I could sell 150 copies here right away.

With kind regards to Mrs. Hooker & Sir William I remain Ever Yours affectionately
James Hector

Dr. J.D. Hooker
Kew

I enclose a tracing of another plant that Buchanan has made out. The part within the red line is slightly "helped" in the drawing – but the rest is a faithful copy. I think you will find it interesting. It is from the Upper Secondary Coal Formation at Shag Point. I have already sent you a lot of things from the same rock. Buchanans insists on its being a My----.

Can afford the time for him, I would like to send Buchanan to work at the rocks in situ. It would be better than his working at a ----- --- specimen as he has been doing.

JH

30: Hector to Hooker, 17-7-1865
Kew DC 174, 459-460
ATL Micro-MS-Coll-10-16, 474-476

Dunedin
17th July 1865

My dear Hooker,

Last mail was very late & only reached this a few days ago. There was no letters for me except one private one – so I fear they have gone on to Wellington & there will not be time to return them to me before the mail goes out. I trust you have received all the things I have sent you by the last few mails. In your last letter you said that you intended to have a talk with Darwin & Lyell about some thing in my letters – which is the greatest compliment I have received in my life.¹⁸ I am therefore anxious to know the result of the confabulation. I suppose it was about the combined axial oscillation & Glacial action? I am also curious to hear what you think of our N.Z. Exhibition. It called for a great deal of labour & worry & I sincerely trust that it wont be all thrown away. The Report will soon be ready for publication. They will do good here by gathering to gether a lot of information that might be lost, but as the subjects are principally of local importance I cant expect that they will be much cared for at home. Nearly all my work will be scattered through them which is in one sense a sacrifice on my part. But I suppose you know the disgusting p---- of cooking malts twice over & it was necessary that it should appear in the Reports in order to shew the results of the Exhibition.

Since I wrote last enclosing the Tracings of the Moa Bones I have got hold of a splendid Head & nearly all the other bones of a species of D. giganteus. The head is well preserved & as it is unique I enclose tracings of 5 views of it – natural size. It is 8 1/4 inches long by 5 3/8 inches wide. I am afraid I will not be able to recover that as people give fabulous prices for them as curiosities to send home to friends who dont value them & only count[?] them on one side as -----.

I am off to Wellington soon after the mail comes in. The Assembly is to meet on the 25th & there will be a great fight about the management of Native affairs. Till that is over I am sure they wont be disposed to discuss Geological matters.

You will see from the newspapers that the ---- ---- of the West Coast of the Island is being rapidly opened up by Gold discoveries. I will try & get round there this summer. The new Gold Fields all lie far North of where I explored but there is little doubt that they will extend continuously into those of the Prov. of Otago. Haast is on the West Coast of Canterbury at present & I have heard nothing of him for a long time. I am quite sick of Town life & long to get into the Field again. The drawings go by Book Post & will reach you a few days latter than this note. You can dispose of them as you did with the other drawings of Moa bones – sent 2 mails ago.

Ever Sincerely Yours
James Hector
Dr. J.D. Hooker, F.R.S.

¹⁸ Hooker to Hector, 18 February 1865, "This tilting theory shuts me up quo ad rock basins – I am sending your letter & sketches to Darwin & then to Lyell."

31: Hector to Hooker, 18-7-1865

Kew DC 174, 461

ATL Micro-MS-Coll-10-16, 476

Geological Survey of New Zealand

Dunedin

18th July 1865

My dear Hooker,

The Com.[missioners] for the Exhibition have decided on getting the Medals struck in London instead of out here as originally intended. The design is to be competed for (premium of £10-10/-) and Mr Morrison our Agent is directed to apply to you to act as one of the judges. I suggested your name as the designs are sure to have foliage & attempt at N.Z. vegetation & no one can better detect abnormalities in these than you. I hope I have not taken too great a liberty in imposing this duty on you.

In haste

Ever Sincerely Yours

James Hector

Dr. Hooker

Kew

32: Hector to Hooker, 13-8-1865

Kew DC 174, 462-463

ATL Micro-MS-Coll-10-16, 477-479

Wellington

13th August 1865

My dear Hooker,

I am up in my new place of residence at last but having only been here for a week have not settled down to work. The Assembly is sitting here at present so that there is nothing but politics talked of. I am staying in the mean time with Mantell who has just resigned his seat in the Cabinet as Native Minister & has been succeeded by FitzGerald. The Native affairs are in a horrid mess & the troops are to be sent home at once & I fear rather in disgrace. The first is that poor General Cameron has been trying to make too much of the whole war matters in his despatches on account of there being a strong party in the Colony that considers that this Colony is getting no no [sic] return for the enormous expenditure on account of the presence of the Troops & that their presence only serves to prolong the war as the Maories mistake their clumsy & lethargic operations for symptoms of weakness & fear. You will see from the papers how this position has been strengthened the other day by the Governor at the head of some irregulars & Natives suddenly seizing Native stronghold before which the General had been mooning for months with a strong army. I fear there is nothing for it now but to turn a deaf ear to all the Exeter Hall nonsense at at [sic] least till the

bumptiousness of the Native has been reduced to adopt very harsh treatment[?]. This mail will take home news again of fresh massacres by treachery. Hitherto such cases have been dealt with by a long palaver[?] & the occupation of the Country by troops & an attempt to find out the exact[?] culprit whereas if they would[?] only let the settlers take reprisals[?] by shooting down a few of the Chiefs who are the real instigators the Maories would soon have freedom. Those that know the best affirm there they are now at last quite defiant[?] of ----- pl- --- or so called patriotism that ---- ---- that to ---- during[?] a war of extermination is so dreaded by the Exeter Hall folks. They would very soon come to terms.

I find that the whole copies of your Handbook have been lying for months in a box in the Govt. office – it being no persons business in particular to see them distributed. I have got a member to give notice of Question[?] in the House, asking the Govt. what has become of the results of your labours & pointing out that private persons have been in possession of your work since Nov. last!! Its shameful[?].

The Museum is getting on here & I hope I shall be able to make a good & useful thing of it. I am sorry I have had to leave all my Otago Collections behind. I have to thank you for the list of the Mosses, there has been some confusion in my numbers however so I fear I will not be able to get a set so correctly named as the Phanerogams. I will set agoing[?] a good Herbarium here in connection with the Museum & will keep strong collections for exchange – so you must remember me. I got a copy of Ramsays paper on the Lake Basins last mail.¹⁹ I wish you would show him my letters & diagrams, as they will interest him. I cant see what he is driving at. Where does he get his *vis tergo*²⁰ in a Glacier that makes it act as a plough? I have always understood the movement of a Glacier to depend on the removal of support from the front. The column of the ice will no doubt drag any parts of it up over a local obstacle such as a ledge of rock & which will in consequence become worn, but if that obstacle confined the path of the Glacier completely the ice surely would only well up till it overtopped it & the portion below the local wall that remain at rest. Neither can I understand how the ploughing power is increased as the velocity is diminished. He says Ice nearly still has more bearing[?] weight – i.e. pressure, but to plough is to remove & that requires & depends principally on motion. I still must adhere to my notion of unequal axial elevation. I have not seen Lyells own account of his views but Ramsays undoing of them in the paper he has sent me differs in many parts from what I mean. If I have time I shall write to Ramsay, but at any rate will do so by next mail. I am very sorry of your Fathers illness but I trust he is quite recovered long before this.

With kind remembrances to him & Mrs. Hooker & yourself.
Ever Yours Sincerely
James Hector.

¹⁹ A.C. Ramsay, 'On the Glacial Theory of Lake Basins', London, 1865.

²⁰ Probably *vis a tergo*, a pushing or accelerating force acting from behind.

33: Hector to Hooker, 13-9-1865
Kew DC 174, 464-465
ATL Micro-MS-Coll-10-16, 479-481

Geological Survey Office
Wellington
13th September 1865

My dear Hooker,

I got no letter from you by last mail but from a note that the Governor showed I was glad to see that your father is better again. The N.Z. Parliament is sitting just now but they have got into such bad blood in setting up about this War expedition that they are not well disposed to spend much money on science. At the Govn. suggestion I proposed the examination of the South Island as you wished but the Ministry would not propose it to the House even. Next year however the House may be in a more amiable temper.

I am now in my new quarters at least the portion that is to be built in the mean time which is only one fourth of the whole building as designed. It is nothing but a large oblong Hall lighted by a clearstory. Part of it I have fenced off as offices in the way they do at the Brit. Museum. As a Museum I shall not have much to start it with at first as all my past collections had to be left in Dunedin. However I shall have a good set of Tertiary Fossils & Recent Shells & a fair share of Rock Specimens & must just work hard collecting till the specimens of all kinds accumulate. I am very anxious to hear what you say about the Fossil Plants, the tracings of which I sent some mails since. The West Coast Coal fields will soon be developed now through the agency of the Gold that is now being found in their neighbourhood. Haast has been over there lately & will send you a copy of his Report I have no doubt.

Mantell put a Question to the Govt. the other day in the House about the distribution of your Flora. The Govt. said they had got two hundred copies according to agreement & to give away & that as the copy right was the publishers they had no control in the matter. You should therefore urge the Publishers to send some copies out for sale as lots of people want them who wont get any of the 200 from Govt. & the Booksellers out here have not ordered any, being under the impression that the whole Edition was to be sold by the Govt.

I got hold of a copy of Lyell's *New Elements* lately & have been reading his chapter on the Miocene Flora. If I could send home a collection of our Fossil Plants do you think that Heer[?] would work them up – In any future collecting I will bear it in mind at any rate. I have one box of leaf impressions packed for you already of most of what you have received drawings. Buchanan is going 3 weeks to collecting plants from some out of the way places in Otago before he comes North. I heard from him yesterday that he had got some good mosses but nothing else worth while. He will be up here next steamer & I shall let him collect a while in Spring. Sir G. Grey proposes a trip this season to examine the Inlets off the NE Coast of N.Z. If I go I shall take Buchanan. Colenso is so sea sick that he wont face the sea at all. He is a Member of the House & is here just now. He tells me he is sending you a new moss this mail.

I have no news at all that you wont find in newspaper ----. I have been working like a Carpenter for the last month.

With kind regards to your father & to Mrs. Hooker
Ever Yours Sincerely
James Hector.

Mantell sends his regards.

34: Hector to Hooker, Undated D [after 13-9-1865]

Kew DC 174, 466

ATL Micro-MS-Coll-10-16, 482

[Undated: after 13th September 1865]

My dear Hooker,

I find there has been a mistake I fear in the table of the analysis of Coals which I enclosed for you today. It may affect the analysis given of English Coal. So please delete the whole of that line as I have not time now to look the matter up. It just caught my eye in the copies I kept the water instead of being 6% should be less than 1.5 in the 1st column & about 1 in the 6th column. In col: 3 the Fixed Carbon should be 55.57 instead of 35.57 – but the best way will be to delete the whole line if you wish to make any use of it.

Yours in haste

[Unsigned]

35: Hector to Hooker, 12-10-1865

Kew DC 174, 467-468

ATL Micro-MS-Coll-10-16, 483-485

Colonial Museum
Wellington
12th October 1865

My dear Hooker,

As I have not heard from you for the last two mails I suppose you have been enjoying summer holidays. However it is possible that my last mail may have gone on to Dunedin and it will be some days before the letters can be returned to this place.

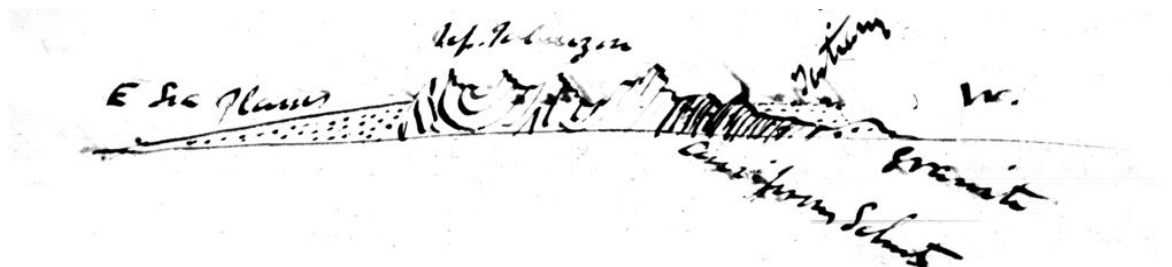
I have very little news to give you as I have hardly been out of Wellington since I came up. The Assembly is still sitting & wrangling as usual & as yet have got through hardly any of the real business. For instance they have not voted my estimates! The Colony is very hard up in consequence of the attitude of the Home Govt. who will neither bear the expenses

of this tedious war – but the Colonists do without[?] it or put an end to it the best way they can, or on the other hand give the Guarantee to help to sell the Loan which has already been expended on Imperial troops. I see no cure for the mess till every soldier is out of the country & the Natives get a little harsh treatment from the Colonists when required. If Great Britain would withdraw the troops & Guarantee the t---- Million Loan that has been expended for the for the [sic] Colonists in carrying out a Native policy which they know to be useless, the Colonial Office would never need to ask another sixpence from Parliament for New Zealand. The way in which the General Govt. has been pulled up & the discredit that has been unjustly thrown on New Zealand by the discussions in Parliament & the illtempered correspondence between the Provinces & the General, has stopped all influx of capital & arrested all the Public works in the Colony. Things never looked worse & were it not for the confidence I have in the natural Resources of the Country & the importance of developing these at once, I would not have the face to ask for expenditure on account of science. However as all my staff have come up & the museum is far advanced I hope they will not cut down the Dept. now.

Buchanan has been spending all his spare time in collecting but does not find this neighbourhood so rich as he expected. He says it falls far short of Otago both in Cryptogams & flowering plants. It is richer in forrest trees. We are getting an index to your handbook, of Native names. I shall send you a copy to print with the 2nd Edit. if you like to do so. Mantell & Colenso have furnished most of the names. There is not a copy of your Handbook to be had now. I wish some more were sent out they have sold at 16/- p. part, the purchaser of the first part being required to pay at the same time for the 2nd part also.

I am longing to hear something of the tracings of the fossil plants I sent you home, also of the Moa bones. I have got several other fine skeletons, especially one of *Dinornis giganteus* that I am going to set up. The bones conform to this species, but the Head which is 8 1/2 inches long is that of Owen's Genus *Palapteryx*!!

I suppose Haast will be telling you all the news of the shift which the Gold ----- has made from Otago to the West Coast of Canterbury. The area is small as compared to Otago as the Gold does not appear to cross to the Eastern Watershed at all & there is only a strip about 14 miles in width being on the Coast on the West slope. The sudden slope & enormous volume of water descending by short straight channels to the sea has served to sluice off a tremendous bulk of Auriferous Tertiary formations & so do a deal of work in preparing the way for the ----- . The Gold rock crops out on the West slope thus.



reminding me very much of the British Columbia except that there is no Coast range of Volcanic rocks. In Otago on the other hand the Gold rocks form a broad central area of about 4 times the area of the West Coast slope, but from its position it has not been so violently denuded. The yield from the new diggings with a population of 20,000 miners is about 45,000 p. month just now. The 4 or 5 ----- rushes that took place to various parts of Otago each reached for a short time about 70,000 p. month. It is very wonderful to see such a difficult & densely bushed country opened up as the West Coast has been during the last 6

months. There is a rumour of Gold being discovered in the Auckland Province. If there could only be a good rush then the Maori influence would soon be at an end.

Haast no doubt will send you his Rept. on the West Coast diggings this mail. As usual he drags in Glaciers in rather a violent way to account for everything. He always forgets that coincidence is not necessarily causation.

Ever Yours Sincerely
James Hector.

36: Hector to Hooker, 12-11-1865

Kew DC 174, 469-470

ATL Micro-MS-Coll-10-16, 485-487

Colonial Museum
Wellington, 12th November 1865

My dear Hooker,

I need not tell you how sorry we all were to get the news of your fathers death by last mail, for though he had reached a ripe old age still he was so active & useful up to the last that he will be missed more by science than many a younger man that is called from the ranks. Sir George Grey, Dr. Munroe, Colenso, Travers & several others all called on me to leave particulars at once after the mail arrived. I was sorry to have to tell them that you were also unwell but I hope that attack soon passed off.²¹ It was so kind of you to write in the middle of all your troubles. I will never forget it. But you must not let my business bother you too much – it can always wait. I am glad you like the fossil plants. Of course the drawings are clearer than the originals but I dont think there has been the least exaggeration or contraction employed in copying them.

I have a few of the original fossils on slabs here – but most of them are in the Museum at Dunedin, where they can be referred to at any time. I have had to start a Museum here at once so that in order to make some show I have temporarily arrested the duplicates of the Otago collection that were packed to send home to you & to others. As soon as I get into the Field however I will get collecting to supply this place & then will send them on to their proper destination. I always thought that an arrangement would be made by the Colonial Govt. to take over the Survey Collections & all from the Otago Govt. I wish they had done so, as the Museum at Otago will not be cared for or looked after I fear. The Museum here is getting into shape. I enclose a plan of it from which you will see that only a small part of it is yet built. By next steamer I leave for the North & will go as far as the Bay of Islands & perhaps the North Cape. I take Buchanan with me, so you may expect a share of the results. Buchanan has been collecting largely here but is disappointed at finding so slight a change in the Flora from that in the South. The diff. is confined to some additional forest trees & a few shrubs. However he has only seen the wooded district yet. I enclose a list of the plants he has found here for the first time. He also desires me to call your attention to the *Drymis axillaris*²² here (if you have specimens – none of his in flower are dry enough to send by this

²¹ Hooker to Hector, 24 August 1865, "I was seized with severe rheumatic fever, from which I am not yet recovered – I was thus unable to attend either [my father's] deathbed or funeral."

²² Genus now named *Tasmannia*.

mail). He would not have recognised it except by the flower it is so unlike the tree in the South. The parts of diff. are in the tree here –

The leaves are hardly coriaceous.

Green on both sides

not Glauous

not spotted

mid rib not hairy

The flowers are very abundant & on long pedicles.

The bark is pale coloured instead of black-brown. It may be worth while your looking into your N & S In species again.

Veronica hulkeana is common in the Gardens here, having been introduced by Mr. Weld about 15 years ago from the Kaikoras. It is known as Weld's *Veronica*. I promised Mantell[?] I would mention this. I am filling a Wards Case for you. I have got a lot of nice plants for you. Among other some plants of the *Myosotidium nobile* from Chatham Is. It grows well here but is destroyed by an aphids. Insect life is bearing to have a sad ---- on the introduced plants in New Zealand for want no doubt of the small ----- that keep them in check at home. There are some beautiful Gardens here. The best is Ludlams up the Hutt Valley. It reminds one a little bit of Kew. He has about 50 kinds of Pines & other trees - & Rhododendrons, Azaleas & Camilias in profusion. I never saw anything equal to the Camilias anywhere. If they thrive so well dont you think that some of the Hill Trees should grow.

Before leaving Dunedin Buchanan packed a Ward Case for you with all the new West Coast alpine plants & some of the doubtful species of the East Coast. This Case has since been dispatched by way of Melbourne so look out for it. I enclose a list of the Plants it contains.

With kind regards to Mrs. Hooker & hoping you are quite well long before now. Believe me my dear Hooker

Your affectionate friend

James Hector.

I have been reading Tyndals lecture on heat[?] with great interest. Mantell says he now understands how HE came into existence as a necessity – for when Satan was pitched out of heaven with the other, on being pulled up at the end of this journey the velocity would be changed to heat – without the direct[?] creation of roasting place by an unvengeful[?] deity!!

By this mail I send home to the R.S.E. a good paper by Skey (my chemist) on the formation of Coal seams. You will be interested in the subject. We have been working at the idea for the last two years. This paper is the experimental[?] matter. I have helped him in every way but do not feel justified in going in for a share of the "plunder".

I see Lauder Lindsay has been going "twice -----" to the R.S.E. of N.Z. Coals from my reports. Very well for a magazine article but hardly the thing for an original? paper to the R. Soc. Skey is more "riled" than I am about it.

37: Hector to Hooker, 22-4-1866
Kew DC 174, 471-474
ATL Micro-MS-Coll-10-16, 488-492

Geological Survey of New Zealand
Kawau, 22nd April 1866
[Continued from Wellington]

My dear Hooker,

Within a very few days of each other I received your Decr. & Jany. letters. The first was forwarded to me when in the North from Auckland & I remember sitting down & answering it but whether the answer was sent down to Wellington or sent off to the Post I cannot recall. But in any case it could hardly catch this mail so I may answer it again to make sure.

About the R.S.²³ I cannot express how much I feel your kindness in thinking of me in the way you have done. You have my full authority to propose my name & I shall not need to avail myself of your generous offer to advance the subscription but will remit it at once on chance of my being elected, when I reach Wellington. If it is not required it can be drawn on by my Bookseller. Even though I am not so fortunate as to be elected I will always remember the mark it gave of your good opinion which I value far more than any society's honours.

I hope though that Haast will succeed in getting the coveted letters after his name, as it is really an object to him. He cares very much about such things and I have no doubt he is right as they help him to go down with some folks.

Curiously enough I was on board the *Eclipse* with Sir G. Grey the other day when he received the letter enclosing the one for me & so also was Mair, for whom there was also a note from you. I think I wrote you once or twice from the North where I have been living in the field since Nov. last. I have now been over the whole of the Country to the N. of Auckland right to the Extreme N. Cape. Buchanan was with me most of the time & all my collections Geol. & Botanical have gone South to Wellington. In the beginning of this month I was hurrying down after them but in Auckland I met with Sir G. Grey who persuaded me to take a trip up to the country of the Geysers & hot lakes where he was going to meet the Natives. We have had a most splendid time. The Geysers with their domes of tinted crystal like ----- flights of stairs with fountains & vases of exquisite forms & colours are glorious beyond description. The Govn. is going to secure ----- miles of this steaming & naturally ----- country to convert into a botanical garden which could easily be made to rival Kew. Just fancy having unlimited supply of hot water under pressure at your disposal, nice soil & every exp---- that can be desired. As a favourite reserve for sight seekers it will become very valuable & the Govn. by ----- it purpose[?] in his usual lease[?] --- to rec---- the f---- of the plan to the Natives who live there & by the work to give them means of employment. The ultimate fate of the property will be one of the endowments [?] of the N.Z. University he is going to found at Kawau. The scheme is good & I hope he will adhere to it. He is making a very nice place here preserving all that is natural & at the same time pretty & yet introducing

²³ Hooker to Hector, 24 November 1865, "Haast has written asking to be proposed for R.S. ... After due & deep cogitation I ordered that, as Haast will certainly be proposed so should you be - & I venture to take upon myself the responsibility of doing this without your sanction." Hector was elected in 1866, while Haast had to wait until 1867.

a large admix[?] of forrest trees & show[?] ----- to the Colony. *Araucarias* & *Pinus* ---- ----- the list. He has desired me to ask if you are aware that *Araucaria* grow from cuttings. If from a branch they are deformed & one sided, but if you take the central shoot – First – you have a perfect tree that soon catches up the original tree by great rapidity of growth. Second, from the ----- top you have 5 or 6 other shoots any of which will continue to carry up the shaft of the tree as symetrically as before while all the others will make independent trees like the first shoot. Sir George showed me all this in his garden & says he has seen no allusion to the subject in any work on pines. If it is a new discovery it is one of the greatest importance to the rearing of trees in N.Z. I suppose Sir G. has written to you all about Kawau which is an Island 35 miles N. from Auckland & a mile from the coast 7,000 acres in ----- which he bought about 3 years ago & is gradually making into a beautiful property. It has fine harbours & has a nice mixture of wooded hills & open valleys. He has all sorts of animals on it now, many wild & game birds in perfusion. His ambition is to found a University so well endowed that it will be independent of all the dim---- politics that so st--- every enlightened scheme of Education or scientific institutions in the colonies. Meanwhile he has built a very nice home & I think after his term of office is over he will first take a trip home & then settle down here. However his plans are not very permanent & he is rather given to change his mind.

Wellington 8 May.

The above was too late for the mail after all as we left Kawau & steamed around the N. Cape to Kawhia on the West Coast but arrived too late to forward letters. Kawhia has been closed during the War & the *Eclipse* is the first vessel that has been in for three years. We found the Natives a little ---- but they did not molest us. From Kawhia we went into another of the West Coast Harbours – Raglan & from there the Gov. made a tour overland to the Waikato to meet the Chiefs there. I went on with the others[?] from the Waikato ---- to the Thames which is supposed to be the worst Native district & then we got hold of the Great Thompson[?] & brought him to have an interview with the Govn. So now I have been over mostly all the N. Island except the Taupo district & there I shall visit next summer as soon as the snow is off Tongoriro. I shall also try & do Mt. Egmont & may perhaps get some new alpines.

From Raglan we came down here & arrived only two days ago which makes nearly six months since I left Wellington. The Govn. will only be here a few days & will then go North. I must settle down here for some time. I have lots of things to write about when I have time & what is better lots of ---- plant to send you. I think I have made out the *Cordylines* at last & that you will not only require to restore *C. stricta* but also add two other species at least. But I am going to try & get heads of the whole of them with the flower spots for you. I will try & send you the Native names by next mail, also other notes. When are we to look for the 2nd Vol.?

Haast has been up the Rakaia again & I see a great ----- in the newspapers about what he has done, which I dare say he will send you. The Taxidermist he talks of is the man I taught to skin the birds for me in Otago. The imitation fauc----- is very strange[?] in a final[?]. By the way they have consigned all my collections, including the birds to an old rag & bone store in Dunedin without windows. The Herbarium is also there. I grudge that more than anything except the birds. I must try & get them to Wellington.

Give my thanks to Mrs. Hooker for her hand in sending me a copy of the memoir of your father, & with kind regards. Believe me my dear Hooker

Ever Your Sincere Friend
James Hector

I have just received your letter with the hints about the museum which I shall study to put to effect. You write as if you sent the drawings of the Fossil Plants. I have not got them.

38: Hector to Hooker, 15-6-1866
Kew DC 174, 475-479
ATL Micro-MS-Coll-10-16, 493-502

Wellington
15th June 1866

My dear Hooker,

I send you two plants by this mail. One is a new form – if not a real N.S. of Melicope – like M. ternata but much smaller in leaf & of darker colour. The habit of the plant is quite distinct. That is to say no one would confound them though perhaps it would be difficult to patch on characters for description.

The second plant is a sub-alpine from Mt. Egmont (3 years since) & has flowered this year for the first time in a garden. We cant recognise it in the Handbook.

I have got Sir. G.G. to set about making a collection of live *Cordylines*. You will have to admit 2 new species I feel certain – besides restoring the old *C. stricta* to the *Flora*. But I am not going to bother you till I can send you a head of each. Sir G. is also getting a large collection of them from the Islands for comparison.

You shall have the two forms. I thought I would also have been able to have sent you the *Ranunculus lyallii* as it was intended that I should go down the West Coast of the Middle Island in a Man of War, but the plans were changed.

However I hope to get those for you yet. The only plant of it that was ever raised in cultivation was sent to you in that last Ward Case you got & of which plants you promise to send a list. I sent you the list about 6 months ago before the case was sent along. I shall try & get a copy of it & enclose it with this. There were some very nice things in that Case – so I hope they will live. By last mail sent you two parcels of plants from the N. Not much in them I fancy.

The great excitements here are 1st the Panama Steamer which leaves for the first time next week. A good number of people are going from this 41 days to home. You must take your holiday some time, by a run round the World. Leave England by the Panama route in Augt. N.Z. Sept. Australia Oct. England Decr. by way of Suez. Cost £350 but then you would save all you would have eaten at home during the 5 months.

2nd Telegraphic Cable across Cooks Straits which is expected out next month. The Telegraph is now complete throughout the Middle Island & will soon be so through the N. also. It is much pleasanter to have to write about real feats than about the eternal[?] war. Thats really over I think now that the red-coats & those tempting -----dition are as good as gone.

3rd Petroleum at Taranaki. They have always seen it in the sea there. Now they have taken to boring & have got down 120 ft. into a porous Trachyte breccia, in the cracks of which the oil has gathered. I believe its origin is by distillate from deep natural beds of Brown Coal by the action of the dykes that intersect the Tertiary strata that must underlie Mt. Egmont. The oil has passed up through the porous dyke rock as vapour till condensed as oil in the ----final portion of the rock. They have not got it in Quantity yet, & what they have is a heavy oil only 25. pt. of kerosene in it. However after all the oil wonders in the U. States, you may be sure that a cautious speculative class are slightly off their balance about this discovery.

Our Parliament meets next month. There will be a great row. Auckland is sadly out at the elbows since the troops were withdrawn & of course will try to make mischief. I am going to write another letter with the plants.

Ever Yours affectionately
James Hector.

14th May 1866

Memo: for Dr. Hooker,

1. Enclosed is a plant growing in the Garden of Mr. Huntly – Curator of Public Domains Wellington which was got from Mt. Egmont by some persons unknown – 3 years ago. This is the first time it has flowered. It is a shrub 2 to 3 ft. high & is an alpine in habit – say 4,000 ft. It appears to belong to the Araliaceae.

[Not Hector's handwriting, possibly Buchanan's]

2. *Melicope* – a sp. intermediate to *Melicope ternata* & *Melicope simplex*, a large dense leaved shrub in the gullies near Wellington.

[Hector's handwriting]

Mantell just pointed out the diff. of the plant, if it to be new I would like it called after him.

3. The tracings of the Fossil plants were sent home in duplicate – one set only roughly done as they were intended to be named by you with any remarks & returned so that we could make out exactly which you meant. Can that still be done? The original drawings, not being arranged in sheets in the same way as the tracings, I find great difficulty in making out to which plants your notes apply.

It is very curious that you should consider the pointed leaves to be *Damaras*. The Coal beds ----- contain quantities of Retinite or fossil gum or resin. I have there set about a complete chemical examination of all the gradation of gums, for that which comes out of the Kauri tree through the different forms it ----- up to the retinite in order to see if there is any essential difference or if it is mainly[?] the loss of volatile oils. The experiments are not far enough advanced yet to speak with certainty but there does appear to be a gap when we reach the retinite.

I send by this mail two packets of plants being the things from the North that are worth sending to you. I enclose the list. Buchanan sends all the species of grasses & *Cyperaciae* we got. I am very busy as you may suppose after a six months absence from the office or I would write you about lots of things. I do not remit the £65 by this mail as my accts. with Govt. have to be squared before I can do so con----tly & there is not time. [Marginal note: If any payment is required at once I have told my law agent in Scotland to attend to any, over: Application from you. He is Anderson Kirkwood Esq., Professor of Conveyancing, University of Glasgow.] I am staying with Sir. George at Govt. House. Man. is with me just now & asks me to say he has recd. your letter, but has to make enquiries about the books you say you have sent him but which have not reached him yet, before he answers it. Again with many & warmest thanks

Ever Your affectionate friend
James Hector.

39: Hector to Hooker, 24-6-1866
Kew DC 174, 480-481
ATL Micro-MS-Coll-10-16, 502-507

Wellington N.Z.
24th June 1866

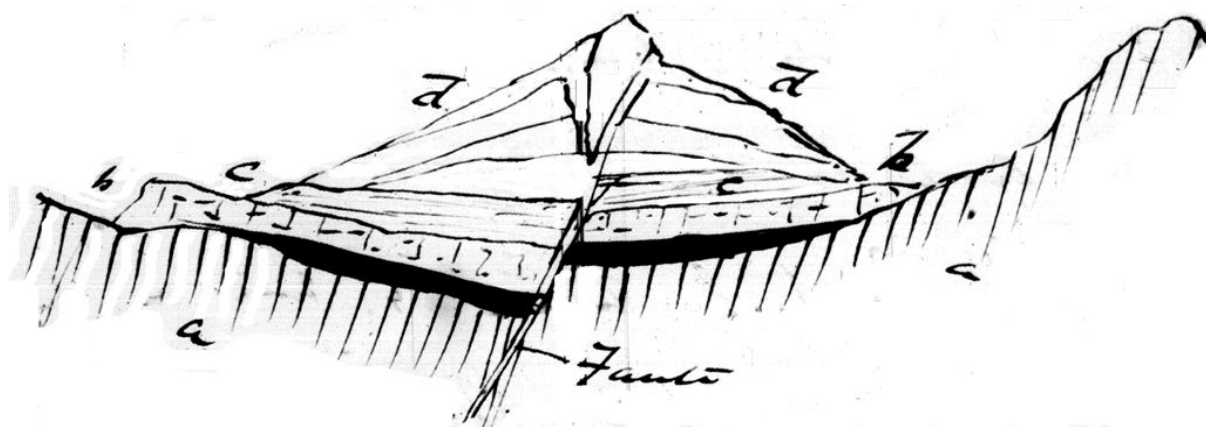
My dear Hooker,

I must send you a few lines as this is the first mail by the new Panama route that is going to work such wonders for New Zealand. At present it is paid for only by Sydney & N.Z. & the boats run right through to Sydney, but it is hoped that Melbourne & Queensland & perhaps Tasmania will join in which case this will be the terminus for the large steamers & small steamers will radiate from this port in all directions – a prospect which greatly delights the hearts of the Wellingtonites.

Travers has just been with me. He says he sent you some fine collections of plants about a year since & that he has written you a lot of letters containing botanical & other information & that he has never heard whether you have recd. any of them. I told him that it cant be your fault & that you must have fancied that he was on his way home as he really intended to be, till he changed his mind & went in for politics again. He is most enthusiastic in Botany and as he has just lost a contested election for the Canterbury Superintendency he is returning to the woods full of political disgust & scientific fervour.

I have set him on to the *Cordylines* & Kiwis & I have no doubt but that we shall have some good results.

I wrote you last week by Suez about the drawings of fossils. If you can make a paper out of the materials or can get Oliver²⁴ to do so it would be a good way of recording the results. In your list you say nothing of the Fern fossils. They are what I would like to found on as some of them are common to both the N.Z. & N.S. Wales Coal Fields. In a Rept. I am preparing for the Colonial Office on the N.Z. Coal Fields I am going to drop the Palaeontological division altogether as I think it is very unsatisfactory & adopt a chemical one viz. Hydrous & Anhydrous Coals. The fact is in some cases the Tert. Br. Coals are Anhydrous & are then just like other coals, while the Secondary Coals are sometimes Hydrous & are thus no better than Lignites. That is to say if the Palaeontological role is to be the ----. I think I told you some time ago that I had sent a paper home for Skey (my Analyst) who has worked up some old theories of mine about the formation of Coal to the R.S.E. They are not publishing his paper at length which considering it is a condensed report of actual experiments, I think is a great pity. I feel convinced that his discoveries will be a great help to Geologists. One point he has still to work up viz. the diff. absorbent power of Carbon – layers of other Carbonaceous mat--- in Solution or suspension, when the m----- is hot & cold. I expect that when the Changes have gone in at great depth in the l---- crust as in very extensive Coal deposits where a circulation of hot water was established by the withdrawal of water from the strata as steam accompanying (perhaps causing) volcanic eruptions the chemical change in the coal by absorption of Carb. matter from the hot solution has been very different from that which would take place in Carb. layers of precisely the same Geol. age but which had been lifted up in shallow basins & subject to the percolation of cold surface waters. I have always had the notion dimly before me, but it was not till I was considering the Petroleum at Taranaki ----- the other day that a cause for percolation of water at great depths & therefore hot – occurred to me – but it is evident that where as is almost always the case volcanic eruption spring from the centres of Tertiary or older basins filled with strata. Generally Marine covering terrestrial beds the withdrawal of water to form the steam that is emitted must be very large & will at once by r---- by percolation as far as ast--- will. A volcano acts in fact like a great pump.



a. Primitive rocks. b. Marine Limestones Littoral Shells overlies the Coal formation (black). c. Argillaceous beds. very deep water shells. d. Volcanic rock, submarine overlaid by subaerial. This is about a natural section for some of our Coal fields where the Coal in the centre of the basin will be Anhydrous. If you take the same section & omit the Sub. Marine Volc. beds & substitute Anhydrous subaerial volcanic rock for Hydrous, i.e. Trachytes for Dolerites & C----- you will have the whole area in the Hydrous state.

²⁴ Librarian of the Herbarium, Kew, 1860-1890.

The English mail is not in yet though due. If it comes in before this mail leaves & I hear from you I will write again.

Ever Yours Sincerely
James Hector

Dr. Hooker F.R.S. &c.
Kew.

40: Hector to Hooker, 16-7-1866
Kew DC 174, 482
ATL Micro-MS-Coll-10-16, 508-510

Wellington
16th July 1866

My dear Hooker,

I wrote you very short time ago by the Panama Steamer. This time it is by Suez which I suppose we must not look on as our regular mail now.

Parliament has met but have not done anything yet. It will require a good Storm to clear the Political atmosphere before they will settle to their work. There is a morbid state of mistrust about the various Native & war questions owing to the general jealousy among the provinces N. & S.

It is a curious fact that you seldom hear of strong political antipathies springing up between people distributed E. & W., nearly always between N. & S. It must be that political temper depends on climate causing uncongeniality of pursuits.

I send you some further particulars about the Petroleum. Its connection with the Br. Coals may interest you. It is a curious fact that in N.Z. in about every case the Br. Coal seam is resting on faulted rocks. The faults being generally N – S & marked by the presence of Magnesian rocks. If the Coal seams are on the East (generally lifted side) of the fault they are Hydrous. But if on the West side while apparently the same by the Fossils they are Anhydrous i.e. in the one case 12 to 26 p.c. of water & in the other 1 to 6 p.c. water.

This coincidence has only recently occurred to me & I am only working it out.



This sect. which is not quite a real section anywhere will show what I mean.

I enclose two plants from Buchanan. We have a Case nearly ready for you. It will go by the first chance. I shall send a paper paper [sic] on the Petroleum home by the Panama Steamer. I have busy with a Rept. for the G. Assembly just now. The Telegraph Cable is to be laid next week.

Ever Yours Sincerely
James Hector

Dr. J.D. Hooker
Kew.

41: Hector to Hooker, 17-8-1866
Kew DC 174, 483
ATL Micro-MS-Coll-10-16, 511-513

Wellington
17th August 1866

My dear Hooker,

I see from the Athenaeum that I have been nominated for R.S. for which I must write more fully & thank you but I expect to hear from you in a few days & the Panama mail after that will reach you before this. I only write now to send two plants – one found by Buchanan in the N. & the other by William Mair Esq. N.Z. of Taupo Lake.

I have just come back from laying the Cooks Straits Cable. It is all right except to complete the shore connections at the South End.

I have had Haast with me for a few weeks. He is rather disappointed about the R.S. I think, but I think at the same time it will show him that it is of more value than the foreign honours with which he has cont. himself so easily.

In haste ever Yours affectionately
James Hector.

[Written in another hand]

Senecio elaeagnifolius
Pittosporum colensoi?

42: Hector to Hooker, 5-9-1866

Kew DC 174, 484

ATL Micro-MS-Coll-10-16, 514-516

Wellington
5th September 1866

My dear Hooker,

By last mail I got formal notice of my election as F.R.S. but I see that my personal attendance is required unless cause for excuse is shown for delay – before Novr. 22. By this mail I shall remit the subscription & a letter to the Secty. stating that I cannot attend which I suppose will make it all right – but if any explanation is required might I ask you to afford it for me. I wont bother you more trying to thank you for the kindness & consideration you showed in having me proposed. I can only say again I wish I felt more deserving of the honour. I see that the subscription is not necessarily so high a figure as you stated & for this year I will adopt the smaller sum as I have just assumed the cares of a householder & may perhaps still further increase my establishment before long & so will want all my -----.

I shall send you some plants by this mail. I have a large Wardian Case nearly ready for you & may send it home with the Commodore (Sir. H. W-----). It has a set of Cordylines in it complete all but two which I shall get yet. There are seven distinct species I believe. I enclose a slip about them. Also I send *Senecio rotundifolius*. I am sending home a set of drawings of a Moa Egg with the Chick bones in it, & for comparison an Emu's Chick & Egg of the same stage of development.

I shall write further before the mail leaves – not for 4 days.
James Hector.

43: Hector to Hooker, 7-9-1866

Kew DC 174, 485

ATL Micro-MS-Coll-10-16, 517-519

[Wellington?]
7th September 1866

My dear Hooker,

Since I wrote to you the other day Buchanan has found growing in a garden plants of the same *Pittosporium* that I sent you last mail & I now enclose fresh specimens & some notes by B. It is said to have been brought from Tongeriro about 3 years ago. It is very handsome & I am putting some young plants of it in your Wards' Case.

B. has just pointed out to me that the *Cordyline* I have named *C. stricta* (*Ti parae*) has fine serrations on the edges of the leaves. This may perhaps help you in looking up your herbarium specimens.

The *Rakaia* is just starting for Panama.

You will see that we have the two Islands bound together by the Telegraph Cable at last.

I cant get a vote this year for my Museum I fear – the Provincialists & the Centralists are fighting so hard in the Assembly that neither will let the other have any money so that all business will come to a standstill I think.

Ever Yours Sincerely,
James Hector.

44: Hector to Hooker, 5-11-1866

Kew DC 174, 486

ATL Micro-MS-Coll-10-16, 520-522

Nelson
5th November 1866

My dear Hooker,

I enclose a few copies of a double Index I have had printed for the Handbook of the Flora. I do not consider the Maori list perfect but will send copies to all the folks that know Maori and get them to correct any errors & to add names. I shall then get it reprinted – perhaps in time for you to incorporate it with the Part II. If Part II is nearly ready I think it will be better to put in the present list rather than none at all.

I also enclose a publication on our Coal Fields.

I have just returned from Taranaki where I spent 6 wet days in the field at the Petroleum bearing beds which are exposed in a 30 mile section along the Coast.

They are Cretaceo – Tertiary strata overlaid by Pliocene Volcanic rocks in which also t---- the rock oil have yet been obtained but it comes with out doubt from the underlying beds as I said in my previous report which I sent to you. Since then they have been finding oil & gas in lots of places.

I am now going down the West Coast & will be in the Bush for 3 or 4 months. Buchanan is off in the Kaikoras & in Feb. will take Mt. Egmont & the Taranaki district. I have just arrived & the mail closes so must be content to send this scribbly note.

Ever Yours affectionately
James Hector.

45: Hector to Hooker, 24-1-1867
Kew DC 174, 488-491
ATL Micro-MS-Coll-10-16, 526-530

Wangapeka, Nelson Province, N.Z.
24th January 1867

My dear Hooker,

Many thanks for your interesting letter of 4th Sept. which has just reached me. I have been in the Mts. for the last 2 months & have had rough work of it as the Country is the most inaccessible in N.Z. & the weather has been horrible. Nevertheless I have never spent time to more advantage Geologically as the natural sections are so fine & varied that I have cleared up many points that were before doubtful & obscure, & I almost fancy I begin to see something like a reliable classification of our formations begin to loom out. There is still a great deal of contradictory evidence as to our Coal deposits & that is the subject I am most interested in at present. The widest deduction I have got to is that we have been putting the cart before the horse in laying so much status on the presence of Granite & Igneous rocks as causing disturbances. In this district the disturbances since Miocene times have been most gigantic & are distinctly seen – yet there are no Igneous rocks of such modern date – the Granite behaves in all the dislocations quite as passively a part as Clay slate.

The faultings are the real first effects of the cause whatever it is & the usual accompanying volcanic & metamorphic phenomena not being present here, must be looked on as accidental & not necessary consequences of dislocations of the Earth's crust – but at any rate they must not be considered as the causes – either proximate or remote of these dislocations. You will be glad to hear that I have also at last found Palaeozoic Fossils, Trilobites *Orthis* &c. in Calcareous slates in our upper Auriferous rocks so that we get a clue to the arrangement of our slate Formations. I have also got a lot of Fossils of newer formations & plenty more Fossil plants, but the latter will be more confusing than ever. However I shall take your advice & describe them all provisionally as soon as I can. We must at least get local field names for them as characteristic of the various strata, even though they be very wide of their real relationship to a true Botanical classification [therefore] I am much obliged for the hints you have given h----- & they will be duly turned to account in the nomenclature I adopt. On the whole the resemblance to the Vancouver Is. fossil Flora is very marked as far as I can remember, but of course exact comparison can only establish this. I am certain you will find some of the *Damara araucarioides* among my Nanaimo & Bellingham Bay fossils & the Podocarpus is just the old *Taxites*[?] again. The mineral resemblance of the beds & their distribution also “bears” out this similarity & in Tasmania & Victoria the same appears to be the case. I have wondered if all these Coal deposits which invariably occupy narrow valleylike depressions in very ancient rocks can have been the subalpine equivalents of the more extensive & regular Coal strata such as of N.S. Wales which latter may have been the delta or Coal plain deposits of the same period. In that case it would be only in accordance with what we know of alpine Floras at present that there should be a greater affinity among the plants embedded in the alpine valley deposits than in those of the low grounds. I think this is worth looking into, only as you remark, it would be necessary to overhaul all the collections[?] from the various Coal deposits in the world.

If I was only home for a spell I would brighten[?] up & look into all these points. I feel quite rusty here all alone as I have no one to discuss some matters with. I am glad you

like the notion of the Volcanic origin of Hydrous & Anhydrous Coals. Certainly tell Lyell anything I --- may write you if you think it worth while. Since I wrote you I have seen a great deal to confirm me in it.

I am sorry I should have mislead you about[?] the Mt. Egmont plant.²⁵ Buchanan got it from a Gardener who vowed that he had it some years ago from Mt. Egmont – but I have not much confidence in the “cove” in question & I can easily believe it came out of Hulks’ Garden at Taranaki. I am sorry Colenso should give you so much bother with his Cryptogams.²⁶ I never attempt to collect any as I know nothing about them except that I would be deceived by all sorts of forms & stages of growth.

I have been up some Mts. lately & got some alpenes but the H.Bk. was left by mistake at Motueka & till I get it I wont say whether there is anything good, new or rare. Some are new to me, but then I dont know what has been got in these Mts. before. At present we talk of N.Z. Botanically as ours – but in time we local workers with the help of your invaluable book will have to work out the Bot. peculiarities of all our Nat. systems which are quite as diversified as those of the Grampians, ----- Mts. or Norway Mts. I dare say.

Was not *Cordyline stricta* in the large N.Z. Flora? or was it only mentioned as a synonym as it is in the *Handbook*? At any rate there is a second narrow leaved, lax-flowered *Cordyline* which has a stem & I think bluish (not blue though) flower but I am getting specimens of it for you. These since I wrote I have seen lots of the Southern *Cor. indivisa* – which is also in the South part of the Wellington Province N. Is. & is the true *C. indivisa* – but the broad leaved[?] Ti of the Taupo district though it has the same leaves (or nearly so) must surely be a different thing as it has 40 to 50 heads, has a huge Flower head with long & broad ---asts & has black shining seeds. This is the true Toii of the Maoris that they make mats of – not the one they eat!! That is the Ti-Tawhiti or Stranger-Ti which grows with 50 to a 100 heads on thin flexible stems which grow very rapidly as the Maoris propagate it by layers & cut out lengths of the stems to eat. They bake it & beat it to a pulp extracting a starchy matter which they boil to a gruel. I heard that the Ti Tawhiti never flowers & was introduced to the various localities by the natives, but the only one I have seen which was up a spur of Mt. Egmont had dead Flower stalks on it & I have specimens.

I was very much surprized to find a strong resemblance in the Flora of the Cape Farewell district to that of the N. part of the Auckland Province. The same heathy flora as round the Bay of Islands with Epacris, rushes, *Gleichenia dicarpa* drosseras & small *Towhai* (*Weinmannia signiolina*²⁷) only *Pomaderris* is wanting. This flora extends down the West Coast on certain soils as far as 20 miles S. of the Buller River or the same range as the *Nikou* Palm. Why is it that in the N. the *Nikou* loves the deepest shade & shelter in forrest & dells – but on the West Coast you will see whole forrests of nothing else standing bluff & ----- through with battered leaves on the most exposed headlands when all the rest of the vegetation is beat down by the wind to a clear felt like mass that you can walk on many feet above the ground?

²⁵ Hooker to Hector, 4 September 1866, "Your Mt Egmont plant is some mistake. It is clearly the common Cape of Good Hope *Phyllica buxifolia* L. and never came from Mt Egmont at all. The genus is nearly allied to *Pomaderris*."

²⁶ Hooker to Hector, 4 September 1866, "The Supplement will be huge & heavy, but I cannot work up Colenso's Cryptogams for it. His masses of imperfect Algae & Lichens are simply not worth gathering."

²⁷ *W. silvicola*.

By the way – The dwarf *Weinmannia* that grows in the heart lands of the N. has always pinnate leaves & is supposed to be the young state of *W. racemosa* but the shrubby plant occupying the same situation in this Island never has pinnate leaves, I shall try to find out more about this as I hear that old Dr. Sinclair always insisted that the little shrub with the Pinnate leaves was a distinct species. But you must be sick of discussing the N.Z. Flora now I should think. When we get the 2nd vol. & suggt. we must go to war among ourselves & never bother you except as Umpire by right of conquest. I am very sorry so few of the plants reached you alive. I left two cases ready for sending off to you when I was last in Wellington. I suppose they are on their way. I will not forget seeds. They are just coming in. The *Cinchona* seeds I have sent to the Gov.'s Garden at Kawau at the place where they will have most chance.

Thanks for your kindness in writing to the Sec. R.S.²⁸ I wrote to him & remitted the money for the first year but I intend to correspond[?].

Ever Your Sincere Friend
James Hector.

Cant you send me a copy of your lecture on Darwin. I wish I could have made a 2501st auditor.²⁹

46: Hector to Hooker, 13-3-1867
Kew DC 174, 492
ATL Micro-MS-Coll-10-16, 531-533

Greymouth
13th March 1867

My dear Hooker,

I have just emerged from the Bush into such civilization as one finds on the "Diggings" and find several letters from you waiting for me at the Post Office here. I shall send you a full account of my doings during the last two months but at present there is only time before the mail closes to let you know that I have heard that the Ward Cases for you have been dispatched from Wellington some months ago & that my clerk advised you of the same. Buchanan has been up the Kaikoras & also up Mt. Egmont. Lists of the plants he got & field notes will be sent you by next mail as it may be some months before they can be published here. He is much disappointed with both. No patch plants on Mt. Egmont all too dry & the soil & rock too friable.

The enclosed letter from a correspondent I promised to send to you some time ago but it was sent by mistake with other papers to Nelson. I do not know the plant he refers to. If you

²⁸ Hooker to Hector, 4 September 1866, "I have written to the Asst Sec. R.S. saying that you are travelling and will attend to the fees as soon as settled."

²⁹ Hooker to Hector, 4 September 1866, "At Nottingham 'Continuity' was the theme of Groves' address, and I followed him with a backing up of Darwinism to an audience of 2500 people."

had time to drop him a few lines I know he would value it very highly. He was Curator of the Auckland Museum.

In great haste
Ever Your Sincere Friend
James Hector

I enclose two n.p. slips with very imperfect notions of my journey in the Editor's words – not mine.

47: Hector to Hooker, 8-6-1867

Kew DC 174, 493-495

ATL Micro-MS-Coll-10-16, 534-536

Wellington
8th June 1867

My dear Hooker,

I have at last got back to head quarters after an absence of seven months. On my arrival I found your letters of Jan. Feb & March and the most welcome Part II for which many thanks. I trust the box will soon arrive with the copies for other people as there is a great deal of enquiry for them.

I made enquiry into the matter of the Grant and I have no doubt you will hear from Dr. Knight by this mail on the subject.³⁰ He says it is all right & that you get £300 for Pt. II as well as for Pt. I & I understand that the extras would be quite covd. in this way. I also spoke to Mr. Stafford about it and he said it is all right.

I trust you got Buchanans notes on the Kaikora & Mt. Egmont plants.

He is rather disappointed with the results of both excursions. I got a few good plants in the Western Mts. but nothing that I could not find in the H. Book so I dont send them. I mean now to make stock collections of Plants for exchange & distribution. If I had only a proper herbarium built I could keep a large number of specimens on hand.

With reference to the Auckland plants Buchanan is under the impression that it was a *Senecio* & not *Ozothamnus* that was new. At any rate there was a new *Senecio* & as it is not in the Handbook I enclose another specimen. Compare it with *S. monroii* & *S. bidwillii*.

I also enclose a note from Buchanan about some mosses.

I am delighted with your adress on Insular Floras but must read it again more carefully.

³⁰ Hooker to Hector, 1 March 1867, "I find that no arrangements were made with the Govt. agent here about paying the remainder of the grant of £500 (viz. £200) for Part II of the Handbook."

I hear from Dr. Knight that most of the N.Z. Plants at Kew had been destroyed last winter & have tried to move the Govt. here to take steps to supply the losses to you in exchange for other things. I should think there must be a good demand now for our shrubs &c. I am going to get a fernery erected to collect our rarer ferns for distribution and preservation also, as the Cattle & fires – working woeful changes in the primeval[?] bush. I have little news except about my work & an account of that you will get in print. I see Lyell founding on Croft just falls short of the essential point of a theory I have to account for the alternate flooding of oppi. hemispheres without faultings of the Earths crust so as to produce the ----- of Drifts & Alpine Conditions. I think I wrote to you about it 2 or those years since.

Ever Your affectionate friend
James Hector.

[*Marginal note*]

I send some seeds.

48: Hector to Hooker, 8-7-1867

Kew DC 174, 496

ATL Micro-MS-Coll-10-16, 537-539

Geological Survey Office and Colonial Museum
Wellington
8th July 1867

My dear Hooker,

I have just seen Sir George Grey on his return from Kawau and as he has a large supply of young Native shrubs ready for planting I represented that you would like some & gave him a memo. of those most suitable which he forwards today to his Gardener. The Plants will be sent to me & I shall see to their being properly packed up. I have four Ward Cases in progress for you. They will be ready by the 1st Wool ship.

I have been stirring up the Gov. to establish a Botanic Garden or some machinery for the collection & distribution of Native plants by way of exchange.

They are well disposed towards it & will secure a reserve I have selected for the purpose but may not be able to get a vote this session.

Could you kindly write me a note of what you think of the scheme so that I could show it to Ministers.

I was glad to hear from Haast that he is F.R.S. I feel he deserves it more than I do & I pitied his disappointment last year as he feels that kind of thing & had been making rather more of it beforehand which put him rather in a fix.

Yours Ever (but in haste as the Members are arriving & all come to call and interrupt me)
affectionately
James Hector.

49: Hector to Hooker, 8-8-1867

Kew DC 174, 497-498

ATL Micro-MS-Coll-10-16, 540-542

Geological Survey Office and Colonial Museum

Wellington

8th August 1867

My dear Hooker,

By last mail I received your very welcome notes of 18th & 28th May and the enclosed seeds of the Falkland Island Grass for which many thanks. I divided the parcel into seven[?] lots and distributed them among deserving correspondents throughout the Colony.

I was rejoiced to hear that Haast was elected F.R.S. as I fear I must have seemed to him to have stolen a march on him which you know was not the case. I wonder what he will go in for next?

I send by this mail a collection of seeds some of which only I can vouch for as in good order – such as the *Pittosporums* & a variety of things from the West Coast and among the rest *Cord. indivisa*. The rest are collected by Morris for me.

I enclose a twig of a plant which I am assured by Mr. Potts who is experienced in raising Native plants, is from a plant which he transferred from the Gorge of the Rangatatta River in Canterbury to his Garden on Banks' Peninsula. It appears to be identical with *Olearia traversii* F. Muell³¹ from the Chatham Is. I enclose a twig of that plant for comparison. I have no specimens of *O. hectori* – but we always suspected *O. traversii* to be the same thing & finding this plant in Canterbury in a similar locality to where we got *O. hectori* serves to confirm this view. I have sent for fresh specimens from the original locality & if it turns out correct either the Chatham Is. plant must be added to the N.Z. Flora or it will merge in *O. hect.*

The plants from Nelson were collected by myself only Buchanan forwarded them in my absence. The *Coprosma* is very interesting. We sent it previously in 1863 from the Wanakao. It is not uncommon as a subalpine in the Western ranges.

Your Part II is now being distributed with great satisfaction to the recipients. It is a most popular work of which the Colonists are proud.

I wish some Bookseller would get out copies for sale. The few the Govt. had are gone long ago I believe & there is a brisk demand for the work.

I hope the plants that have arrived will thrive with you. I have four more cases in preparation & through Ludlam have got a case of young *Nikou* Palms. I expect soon to go through the Taupo Country where the *Cord. indivisa* is cultivated so I wont say more about the matter till then. I dont think that the West Coast one & that I saw at the lakes will be more than very distinct variations. Buchanans impression of the difference is so strong that he say it was not *indivisa* at all that we saw but only a form of *banksia* or some other. However I

³¹ Described by Ferdinand Mueller.

saw lots of them this last season in bush & in open, old & young, but always with stiff erect stems and single sturdy heads. A most tropical looking tree. It certainly cannot be the Tawhiti at least.

Trusting that you are enjoying yourself in Paris. With kind regards,
Ever Your affectionate friend
James Hector.

Mantell has been putting the idea in my head of trying to get a run home next year.

50: Hector to Hooker, 18-8-1867

Kew DC 174, 500

ATL Micro-MS-Coll-10-16, 543-545

Wellington
18th August 1867

My dear Hooker,

I forgot by Panama mail the other day to thank you for attending to my R.S. subscription.³² I wrote to the Secty. a long time ago informing him that Stanford had instructions to attend to it & to receive my Transactions. I am very sorry therefore you should have been troubled in the matter, but if you are passing Stanfords any day please call in & he will refund to you.

I hope you will get the seeds I sent in good order. I am getting some more but the Natives say that only very few came to maturity this last season.

We are having a most frightful winter. Storms exceeding any on record. The greater part of the Middle Island has been covd. with snow & the loss of sheep has been very great. I shall try to investigate the weather changes – but all Telegraphing is stopped for the present.

It is curious how invariably the seasons of S. Hemisphere follow those of the North in character.

This final accession of snow will start the alpine plants again. The snow level disappeared to such an extent during the last two seasons that the Mts. were quite parched. Hardly any of the Jackson Bay Mts. that were covd. with snow in Autumn 1862 had any on them this last Autumn.

In haste
Yours affectionately
James Hector.

³² Hooker to Hector, 18 May 1867, "The R.S. Scy has written for your subscription, which I will arrange."

51: Hector to Hooker, 7-9-1867

Kew DC 174, 501-502

ATL Micro-MS-Coll-10-16, 546-547

Geological Survey Office and Colonial Museum

Wellington

7th September 1867

My dear Hooker,

By this mail I send a small parcel of seeds. Also a box containing a few chert flakes found in cooking ovens along with Moa bones and which I will refer to in a paper by next mail. I also send a notice of a Moa's Egg containing the bones of the Embryo Chick and drawings of the Egg & bones which I shall be glad if you will put in some anatomists hands who will look up the subject. I have not attempted any detailed description of the individual bones myself. Along with the above drawings are some plates of chert & flint implements which I wish kept till I send the paper I have mentioned is to be sent by next mail.

It is ready now but Mantell has suggested additional facts for insertion at the last moment. The paper will be a notice of the manner in which the Moa bones are associated with chert flakes & other such implements in the interior of the Province of Otago – but without proving any great antiquity or such state of the Natives.

We are all very crusty here on account of the recall of Sir George Grey & the manner in which it has been done. He is very much cut up about it. I fear it is a case of “falling between two stools” as the sympathies out here for him with the majority at least will be very temporary – it will be out of sight out of mind – which at the same time he has certainly played for a vote of want of confidence from the Colonial Office.

Every Yours very Sincerely
James Hector.

Dr Hooker FRS
Kew.

52: Hector to Hooker, 16-9-1867

Kew DC 174, 503

ATL Micro-MS-Coll-10-16, 548-550

Geological Survey Office and Colonial Museum

Wellington

16th September 1867

My dear Hooker,

Travers asks me to mention to you that along with the plants he sent to you two years ago there was a small case of Bones from a cave in Collingwood – Nelson. He has not heard anything of them and fancies the box may be lying waiting his return. As he does not now mean to leave N.Z. he would like the bones to be put in some one's hands for examination. He says the notes are attached to the specimens & there are some other Nat. Hist. things in the box.

Sir G. Grey has written to you about the Kawau Plants. They are in good order & I am repacking them now with wooden battens between each to keep the roots steady.

In addition to the Northern Plants there will be some South alpine & some from the Chatham Island.

Could you get me some seed of the Hemlock (*Conium*). It has been suggested that its decoction would cure Scab in sheep as well as tobacco? What do you think.

If you are sending out any plants to the Colony any of those in the enclosed list would be acceptable.

Ludlam has drawn it up.

Ever Yours very Sincerely
James Hector.

In haste as I have just returned from country in time to catch the mail.

53: Hector to Hooker, 7-10-1867
Kew DC 174, 504-505
ATL Micro-MS-Coll-10-16, 551-556

Geological Survey Office and Colonial Museum
Wellington
7th October 1867

My dear Hooker,

I was very glad to receive your note of July 29th & to hear that you had been away for a trip.³³ I am sure you must have needed it as the work you have got through in the last two years is very wonderful. It is very pleasing to think that you are satisfied with the conduct of the Govt. about your Flora and I told Mr. Stafford so.³⁴ I will tell you a secret – that some few of us who are really able to appreciate the great labour you have undergone for the good of the Colony have conspired to make you a present that you will we hope keep and hand down as an heirloom to testify that we are not ungrateful. It stands in the museum now & is an object of Universal admiration – being (see Photogram enclosed) a Cabinet & writing table of inlaid New Zealand woods only second in value (& by the same workman) to that sent to the Queen in 1861. I hope you will like it. It will be sent by the first wool ship that leaves direct for London, and I will then send you full particulars.

My time has been cut up very much of late and I have not been able to get the paper ready I promised in my last letter on the Moa remains. I cant do it very well till I get Mantell's help & he is occupied with legislation at present. I will take your hint about the Lake basin Theory & put it in a short form before I start on my Museum work.³⁵ If we only had proper means for publishing I could do lots of work, but the printing establishments are very weak here as you will gather from the style of the abstract report of the Department which I enclose. The four Wardian cases of plants are now filled & ready to go by the first chance. I think every one of the plants should reach you alive as we have been very careful indeed to pick out sickly ones & to secure them in every way we could think of.

Buchanan found out that the *Senecio* he sent was *Ozothamnus*. It is very curious getting a new *Phyllocladus* in Auckland. Colonel Haultain is very curious about it as he is well up in the Auckland Flora.

Your explanation about the mosses is quite satisfactory to Buchanan only he naturally feel a little sore that his good work should have been lost through Wilson's action.³⁶

³³ Hooker to Hector, 29 July 1867, "My wife and I have had a fortnight in the Engadine valley, upper valley of the Inn, a noble valley with Lakes, Moraines & Glaciers, galore."

³⁴ Hooker to Hector, 29 July 1867, "Your Govt. have treated me handsomely, sent me £300 for Part II of Handbook & propose to pay the £53-14 printers bill for corrections due to constant intercalations."

³⁵ Hooker to Hector, 29 July 1867, "I wish you would publish a short pithy succinct statement of your "tilting" views of Lake beds I fear if you do not you may be forestalled – not that I have any reason to repeat it, but it is a fine hypothesis, & likely to be snapped up."

³⁶ Hooker to Hector, 29 July 1867, "With regard to Wilson's samples from Buchanan, Mr Wilson never said a word to me about them, though I invited him to do the mosses for N.Z. Handbook. ... It has always been with the utmost difficulty that I have screwed work out of Wilson & I had after years of delay to take all the Indian mosses out of his hands."

I quite agree with all you say about the feeble action of streams as eroding agencies only I object in N. Zealand at least to the term Glacial Epoch. It is not a particular period or epoch of time as it is still in operation in some places – where the producing circumstances still prevail. The distance to which Ice action radiates depends on the area of country above the line of perpetual c----- & that must be always diminishing at an irregular rate by the very Ice action it gives rise to.

I am going up to Taupo & on to the Thames this year as I wish to be where they are getting this Gold in the North. It is a curious circumstance the occurrence of Gold in what appears to be a Trachytic tuffa probably of Miocene age. I must have the Thermal waters carefully analysed for Gold & may perhaps find a clue to its manner of deposit.

I sent you some Chert Flakes by last mail – are they like those at the Cape? I have just recd. a live *Apteryx australis* (one died) and an egg, its circumferences are 12 1/2 & 10 inches!

Your affectionate friend
James Hector.

When did Colenso send you the Maori index? Mantell is very anxious to know as he borrowed his map & kept it some time.

54: Hector to Hooker, 27-10-1867
Kew DC 174, 506-507
ATL Micro-MS-Coll-10-16, 557-562

Up Country in the North Island
27th October 1867

My dear Hooker,

I am now on my way to Taupo and the central district of the North Island and trust that the Natives will let me make a more careful examination of the Mts. there than that has hitherto been possible. I have been staying with a brother of the late John Bidwill and have got a copy of his notes made during his excursions through the Taupo Dist. 20 years ago and as I believe he was a good observer it will be very interesting to compare his account with the ---- of the ----.

Before I left Wellington I had your Cabinet carefully packed up & it will be sent by the first ship. Mr. Gore will write to advise you of it & a regular letter of presentation will follow in due course. I hope you will believe that it is only a very inadequate expression of our sense of the service you have done the Colony. Four or five cases of plant will go also by the first ship. Buchanan wishes to cull out the dead & sickly ones before they start so perhaps being left to his own devices he may detain them however.

I have just passed through a grove of the *Cordyline indivisa* on the top of the Rimutaka Mts. Not one had a forked stem & all had the green leaves like those I saw last summer down the West Coast of the South Island. I hardly think they can be the same as the many headed trees with the Yellowish green leaves & bright red vines[?] which I saw at Tarawera – in Bidwills' note as occurring at Taupo also. I will try to clear up the subject if I can on this trip.

It may interest you that the agricultural & pastoral districts of Wellington have for some years back been overrun with Thistles & in some places large sums have been spent both by Govt. & private individuals in the attempt to eradicate them. They are now of themselves disappearing and this year every one speaks of the good they have done the land and the fair growth of grass which has succeeded their brief reign. This is especially the case in stony land or steep slopes.

By this mail you will get a Photo. by Travers of the Moa Chick & also one of Mantell's garden with a view of the Cathedral (R.C.) Govt. Buildings & front[?] of my house, with Mantell, Knight, Buchanan, self & little Mantell in the foreground.

Ever Your affectionate friend

[Signature cut off]

55: Hector to Hooker, 4-11-1867

Kew DC 174, 508

ATL Micro-MS-Coll-10-16, 563-565

Napier
4th November 1867

My dear Hooker,

I have just recd. your letters of 29th Augt. The one relating to the Botanic Garden I have sent on to Stafford (the Col. Secty.) who knows how to turn it to account. It is exactly the thing required to stir them up. Ludlam will be as proud as Punch. I have sent him a copy as it may get you some good N.Z. things.

Many thanks for the valuable hints about the Ward. Cases.³⁷ I have written to Mantell to look after the matter as I shall not be back till after the cases have been despatched.

I have just reached this place overland from Wellington. I wrote you on the road & told you how the Thistles had disappeared. The New Curse to the grass is the *Perepere acaena* which is forming a complete mat over the surface on some of the runs. What can be done for it?

I have just been at a splendid property 50 miles from this where there has been more done in planting than any other place I know. I will get the proprietor Mr. Rusick[?] to make

³⁷ Hooker to Hector, 29 August 1867, "A thousand thanks for preparing the boxes for us, pray take care to put plenty of potsherds for drainage below, & not too much soil. Paint over & stipple the glasses or most of them, light green, & above all remember to fasten down the earth with battens of wood."

a list of what he has succeeded with. For East Coast *Pinus insignis* is the best tree I see. I am just starting for Taupo & will next write to you from Tongoriro. I am going up Ruapehu perhaps.

Sincerely Yours
James Hector.

56: Hector to Hooker, 7-1-1868

Kew DC 174, 511-514

ATL Micro-MS-Coll-10-16, 568-571

Geological Survey Office and Colonial Museum, Wellington
7th January 1868

My dear Hooker,

The plants retd. to in a list sent to you on 6th Nov. leave to day by the *Asterope* in four cases secured on the deck.

I enclose the Bill of £/- for those and will send duplicates via Suez.

The same Bill/£ also includes a case containing the Cabinet which I hope will reach you in safety and be accepted. I cannot as yet send you the names of those who have formed in the presentation but you will find all your appreciating friends on the list.

I have to acknowledge your letters of Oct. & Sept. I have only recd. them as I have been up at Taupo Lake and at Ruapehu & Tongariro. I was too early for plants but made a large collection of the few that were in flower. I got nothing new but most things that were got previously by Colenso & Bidwill.

Tongoriro is still active. Ruapehu is not. They both sit on marine tertiaries to the westward of a straight edged mass of Palaeozoic Slates. The elevation of the Tertiaries which are Upper Pliocene is equal to 2700 ft. It is much the same kind of thing as if a great volcano were to burst out at the base of the submarine cliff along the West Coast of the South Island & during the display of Volc. Energy the sea bottom were to rise with its covering of marine strata to the above altitude.



- a. Highly fossiliferous crag[?] Pliocene. Rises from Sea level to 2700 ft. both from E. & W. in a sh--- only broken by gullies of denudation.
- b. Turb----- Clay Marls. Fossils from ---- Calc. strata.
- c. Clay silt evidently deep water beds with --- as far foraminifera.
- d. Trachyte & ----- Mts. d----- P---- drifts ---.

I am going back there at once as I have only come down for some business connected with the medical board of which I am Pres.

How glad I am you are to be Pres. of Brit. Assoc. I wish to goodness I could get home. I would add my little effort to make it a meeting worthy of its President. I wont despair but this visit of the Prince will turn everything topsy turvy.

I am glad you are pleased with the chert flakes. I will send you more & also some of the more highly finished axes &c. I have a very fair collection now.

I am putting up a new[?] Maori House 55 ft long 20 ft wide & 16 ft high all Carved in the most splendid fashion. It is the finest Carved Ho. the Maories have built and the Govt. very wisely took the occasion of their turning rebel to confiscate it & transfer it to my care for preservation. In 50 years it will promise sincere interest[?].

Many thanks for the Ward Case of plants of which I have recd. B/L. I will report when they arrive. The next cases I send I shall build in a very different style. If you send out more plants please send Pines & Rododendrons.

I had a letter from R---- about the Flora Hand Book & have placed it in a publishers hands. I hope some will soon arrive as there is a great demand for them. The Littergrass[?] you send are very good. Buchanan has not seen them yet as he is away in the South.

Your notes on *Olearia traversii* have been sent on to Mr. Potts. Haast is down about the Rangitata now will no doubt find the plant if it is there. He has been building up Moas at a great rate & has no doubt sent you Photos of them.

With all good wishes of the season
Your affectionate friend
James Hector.

57: Hector to Hooker, 7-2-1867

Kew DC 174, 515

ATL Micro-MS-Coll-10-16, 572-574

[Wellington?]
7th February 1868

My dear Hooker,

I have just ret'd. from Auckland having been visiting the new Gold Fields at the Thames. They are very like the South American mines I think & will yield return to well laid out capital but nothing more. No great yield to unskilled labour.

When in Auckland I went over a good many of old Dr. Sinclairs plants & found some good things in there, which I will send you notes of. Kirk has been on the Barrier Islands with Hutton & has drawn up an elaborate paper on the Botany which I will forward to you when ready. He says he has got a new Pine? I have not seen him yet but from Huttons report he must be a capital Botanist.

I am quite pleased[?] with Hutton. He is well up in Geology & Nat. Hist. & has a calm judgement & is not superstitious.

I wish he could do my work & let me join your Brit. Assoc. meeting.

In haste
Sincerely Yours
James Hector

We have had a Hurricane & Earthquake. See paper.

58: Hector to Hooker, 1-3-1868

Kew DC 174, 516-517

ATL Micro-MS-Coll-10-16, 575-578

Wellington
1st March 1868

My dear Hooker,

Your long expected case of plants has at length arrived and considering the length of the voyage ([*left blank*] days) with a very small loss as you will see by the list I enclose. I opened it with Ludlam & Travers and they are well satisfied of the success of the method of packing you adopted.

By Ludlam's advice I have not removed them from the case but will continue to water them with caution & keep them in a shady place till they look fresh & vigorous.

59: Hector to Hooker, 2-4-1868

Kew DC 174, 518

ATL Micro-MS-Coll-10-16, 579-582

Auckland
2nd April 1868

My dear Hooker,

I have just been on a visit to Sir George Grey who has quite turned hermit at Kawau in the midst of his improvements and wild beasts. He has made a beautiful place of it & shown what the climate is capable of doing in aid of good gardening. I promised him to tell you that he has nearly every known species of primitive Capsicums, Cinnamon, guavas, Tea, Coffee, Paraguay tea, Cork Oak & lots of other vulnerable things growing to perfection in the open air. One porch of his home is covered with Granadillas which do not even ripen in Victoria nearly so well as with him. I am going back there tomorrow with Sir George Bowen the new Govr. who is a very agreeable man but has not any scientific proclivities.

When I left Wellington the other day the plants were still doing well with the exception of the *Abies grandis* which is getting brown. Ludlam wont let us remove any of them as his experience is in favour of letting them remain in the box for a long period after they arrive.

Stafford (Premier) was up at Kawau with me & is quite won over to the necessity of following out your suggestion as to a Botanic Garden. They have got a capital domain here but no system of management.

In haste
Sincerely Your affectionate friend
James Hector

[*Marginal note:*]

I see Mueller resigns at last V----!!

60: Hector to Hooker, 3-6-1868

Kew DC 174, 520-522

ATL Micro-MS-Coll-10-16, 583-591

Wellington
3rd June 1868

My dear Hooker,

I suppose this will reach you in the midst of your reign at Norwich and I feel it almost wrong to write to you having nothing particular to say. How I wish I could be one of your most devoted though unworthy subjects. I will keep an anxious outlook for the gleams of wisdom we are sure to get from you in your address.

Since I last wrote I have been again at the Bay of Islands reexamining the Kawakawa Coal-Field which is now assuming a position of importance in the country. The Coal is undoubtedly as good & even better for steam purposes than the N.S. Wales coal, but is associated with plants that I fancy you would call Miocene. The Roof is a Green sand full of very badly preserved casts of marine shells but none characteristic of any older formation than Tertiary.

At the same time from Analogy with other parts of the Colony I believe it to be at the base of what I have termed my cretaceous-tertiary series & that a great thickness of Chalk Marls have been removed by denudation being now represented by a superficial drift of flints. I am going to lithograph all the fossils both plants & shells & give them interim field names. We have not the books nor the skill to do more & can't spare the specimens yet.

Haast has at last got a museum & from Mantell who is a good judge I hear it is a perfect model of good arrangement. I am going to take a run down to see it.

His Moas must be a splendid sight – the cut in the illustrated news falls far short of the reality I understand. I am anxious to have some skeletons carefully collected so that we will have the bones & all the bones & nothing but the bones of the same bird. This has never yet been done. I have set one D. giganteus up 9 ft high, but had to introduce the pelvis of a different individual.

I sent Kirk up to the North Cape, & he has made large collections of plants & is very sanguine as to many of them being new in which neither I nor Buchanan agree. Kirk is a capital botanist, but is too critical for a new country. It is not fair to expect your flora to be as rigidly correct in the diagrams of species as an English Flora for instance, & if he finds the least discrepancy in the description from the plant itself, he jumps at its being new although there is no doubt of its being the plant you meant.

Thus he wanted to make Sapota costata a different tree from yours because your general ch. says 1 seed & it has from 1 to 3 seeds. This we all know & Colenso pointed it out in his first Essay in 1847!! He has fallen foul of Dacrydium colensoi also just as we did & the list says it is now calling out Silver Pine (or Podocarpus dacrydiodes var. Yellow Kahikatea) that grows on dry ground & has single sparse burrs or seeds the Dacrydium colensoi. I think he is wrong but at the same time the Silver pine is more allied to Dacrydium than Podocarpus.

Pittosporum is the genus after his own heart in the North as he can play the changes in it to any extent just as we can with *Veronica* and *Coprosma* in the South. He is such a capital observer however that he will do much good. We have managed to get him a scientific staff appointment. He is to be Secty. of the Auckland Branch of the N.Z. Institute – Curator of the Museum & Meteorological Observer – which combined will give him enough to live on.

I have never except old Bourgeau seen his equal at drying plants.

The wretched waiting for the Prince who did not come after all, but was advised to bolt to his Mamy's apron strings, lost me my trip at the proper season to Tongariro & Ruapehu.³⁸ When I was there in November I was much too early.

I have just got the second vol. of Lyell's *Principles*. It is splendid – he touches on all sorts of things I have been dreaming about. I wish I could get home to rub up a little. I see in the International[?] Observer a writer has started the old notion of our sea level in South Lat. not being the same distance from the Earths' centre as Jones'[?] North which is a pet notion of mine. He arrives at it from comparing the Barom. readings which show 1 inch less pressure in 50° South than at 50° N. Some recent observations on Refractions observed at the Melbourne observatory with the new instruments have not been explained as they differ from what they should be theoretically. Can this diff. level of the sea have anything to do with it? How the difficulties of our marine drifts alternating with Glacial or Alpine drifts would disappear if we had a cyclical change of sea level proved without chopping up the crust of the Earth in the usual North---- manner. Now I have bored you long enough with my chat. Consider that I applaud you vehemently – and trust that all of us in N.Z. take a great pride in your minted elevation to the chair R. to Brit. Assoc.

Believe me ever your affectionate friend
James Hector.

³⁸ Prince Alfred returned to England in mid-1868 following an assassination attempt in Sydney, that left him with a gunshot wound.

61: Hector to Hooker, 6-6-1868

Kew DC 174, 523

ATL Micro-MS-Coll-10-16, 592-594

Wellington
6th June 1868

My dear Hooker,

Mantell who took charge of the Plants you sent out reports that since they have been removed from the Ward's case there has been great mortality so that out of the 26 there only 12 now alive.

I hope that those I sent to you will have better luck though I fear not as I hear from Thwaites at Ceylon that a case I sent to him at the same time, has quite failed. However as they were not in charge of a passenger very likely they got too much attention & water.

I am now filling a case with potted specimens of all the varieties of the *Podocarpus* & *Dacrydium* so that if planted out successfully[?] at some future time the vexed question can be solved. Ludlam says it is best to pot them.

I was visiting Sir George Grey lately & tried to stir him up to procuring Native things for you. He has splendid opportunity with his gardens & more. I wrote to you by this mail the other day but forgot the above information.

Yours Sincerely
James Hector.

62: Hector to Hooker, 8-6-1868

Kew DC 174, 524

ATL Micro-MS-Coll-10-16, 595-597

Wellington
8th June 1868

My dear Hooker,

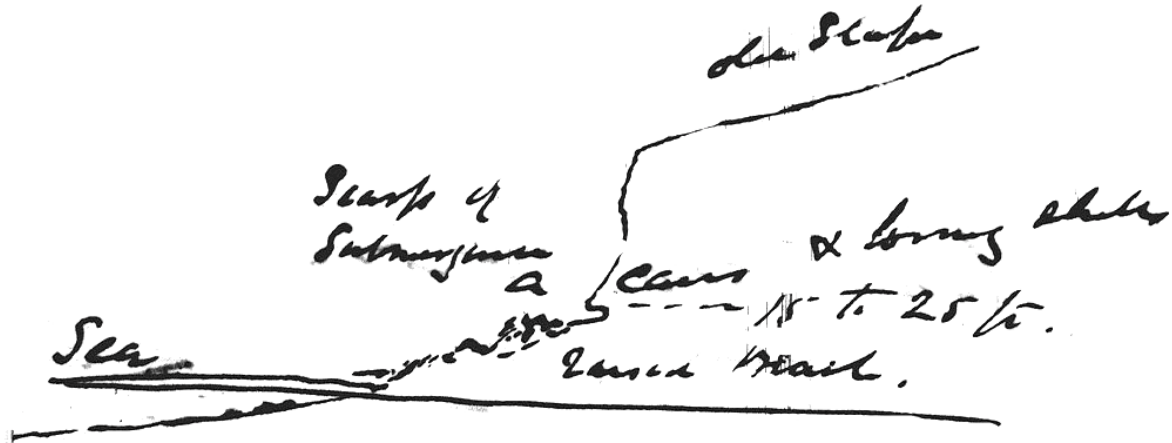
A third letter by this mail is necessary as I have just recd. your long & interesting letter of Mar 31 by way of Auckland. It passed through this in the Govn. Bay three weeks ago!!

I have only time to say that I have both Lyell's vol. II & Darwins Book & revel in them.³⁹ I am sorry that Lyell has enlarged so much on the N.Z. Earthquakes.

³⁹ Hooker to Hector, 31 March 1868, "Lyell's vol II is out & has surprised us all for the vigor with which he has grasped his subject, & numerous amounts of new matter he has put in. ... Darwin is busy at his book on Man. Expression is his present subject – of his last book, 1100 copies sold at once, and a new Edition was called for in 10 days!" Darwin's "last book" was *The Variation of Animals and Plants Under Domestication*, 1868.

I think there must have been a good deal of imagination in the accounts. Previous to 25 feet ago whatever that may represent in time, the coast of New Zealand was everywhere undergoing submergence – not elevation.

Wellington harbour is underlaid by Lacustrine beds with only 4-8 ft of marine silt on top. The spurs descending to the harbour are all thus ÷



nothing but depression could have formed a scarp on the part of the spurs this way. Now that there has been a slight elevation the sea fails to get at the base of the cliff.

I have discussed this matter in my paper on the Lakes, which I have not been able to finish yet. Can you find out for me the best places for Seismometers?

Your Sincere friend
James Hector.

63: Hector to Hooker, 9-7-1868

Kew DC 174, 525

ATL Micro-MS-Coll-10-16, 598-601

Wellington N.Z.
9th July 1868

My dear Hooker,

I am very glad you like the Writing Table & I only hope you understand that it is only a very feeble representative token of how much your work for N.Z. is appreciated, at present by few perhaps but in future times it will be by all.⁴⁰

⁴⁰ Hooker to Hector, 1 May 1868, "I have an enormous deal to thank you for – in primis the superb Writing Table – which as far exceeds my expectations, as it does the photograph – It is indeed a trophy to hand down to posterity - & I cannot tell you how proud my wife and i are of it. It is quite the most beautiful thing of the kind I ever saw."

I did intend to have written to you all I think about Darwin's Book and Lyell's 2nd vol. but I have been down in Canterbury and the approaching meeting of the Assembly brings such a lot of horrid office work, that I have not had time to think of anything abstract.

I saw at Canterbury by the way, such nice selections from the Kew museum which you sent Haast. When you have any more to spare I hope you wont forget the Colonial Museum. Have you a set of N.Z. woods? I will be glad to send you a complete set as tested for breaking strain in pieces 20 inches long & 1 inch in square section with the deflection and breaking strain marked on each specimen. You will see them all tabulated at the end of the N.Z. Ex. Jurors' Reports.

I am sorry for the fate of the cases of plants, but have at once set about replacing them, I hope with better luck than last time. It was a shameful trick to put them in the hold. I saw them so carefully lashed on deck.

I have just got two specimens alive of the Tuatara (Big Lizard) (*Hatteria punctata*) and send one of them to Günther by this mail. Excuse this very shabby note which I will supplement if I have time & Believe me

very affectly yours
James Hector.

64: Hector to Hooker, 8-8-1868

Kew DC 174, 527-528

ATL Micro-MS-Coll-10-16, 602-604

[Wellington?]
8th August 1868

My dear Hooker,

I have to thank you for your interesting letter of 31 May. The mention that Lyell is interested in my work is very gratifying and greatly strengthens my hands.⁴¹

I enclose a copy of a memo: which will show the steps I have taken to get the information about childbearing among the Natives for Darwin.

Also notices of our proceedings both at the Phil. Society which is the local Wellington Branch and also at our big gathering of the N.Z. Institute which comprises all the societies throughout the colony incorporated under the Act of Parliament I sent you last year, when it was passed.

⁴¹ Hooker to Hector, 31 May 1868, "Lyell is wonderfully interested in your Tongariro Geology; and I do think that New Zealand is the great problem of the day."

We have meetings of one kind or other every week. The Society meets for discussion every third week & an address & conversazione of the Institute inter---- along with lectures by my self. The first of which is on Tuesday next.

I enclose you all our proceedings up to date & it would be very useful if they were noticed in some of the scientific Journals.

I will send them regularly. We are to publish proceedings containing a notice of what is said in discussion at all the societies & Transactions containing the papers at length. There have already been some capital papers read both in Auckland & here. I set Kirk & Colenso on to a little scientific skirmish about *Pittosporums* & Travers & Buchanan at one another about the distribution of *Veronicas*. Mantell I have managed to commit to a thorough overhaul of all we know about Moas & the authority we have for different species & their distribution.

I suppose when I raise my voice about Geology some one will be down on me in time – but it will all help to have us going & I trust will show a result creditable to the colony.

We have our meeting in the carved Maori house which is 50 ft long & surround by 48 carved figures of the most hideous description each 4 ft high. When lighted up & the long table covrd. with Moa bones it formed a sight that would be famous in London.

I meant to have sent some papers by this mail but have been too busy. Haast is out of work now & wants to get on to my staff but I fear there is little chance for this year of getting even the votes we have.

Very Sincerely Yours
James Hector.

I send a sample of the Meteorological return I publish each month. Do you care to get this?

At this time you will be in the midst of your work at Norwich. I have lots of seeds for you but hardly dry yet. I hope Mrs. Hooker is all right – give her my kind remembrances.

I have been requested by Dr. Hooker at the instigation of Mr. Darwin and other gentlemen interested in Ethnology to procure information respecting the habits of Native women in child bearing.

1. Is child bearing assisted or solitary.
2. Is the umbilical cord cut and tied as among Europeans and if so is it a habit of modern introduction & how was the severing of the connection between mother & infant previously effected.
3. What is the duration of labour.
4. Are there any peculiarities in the treatment of newly born infants.
5. Can any traces be derived from the legends or superstitions of the natives as to rites, observances or ceremonies connected with childbearing.

As great importance will be attached to correct information on these points for comparison with the results of similar investigations in other oceanic Islands, I desire that the above questions should be addressed to any officer of the Native Dept. who may be qualified to make the enquiries to afford explicit replies.

Dr. James Hector.

65: Hector to Hooker, 8-9-1868

Kew DC 174, 529-530

ATL Micro-MS-Coll-10-16, 604-608

[Wellington?]
8th September 1868

My dear Hooker,

Sir George Grey who goes by this mail has a parcel of seeds for you from me – some of them collected by Travers. Sir George will be able to tell you all about the Museum & the N.Z. Institute. He was at a meeting the other evening and we presented him with an adress. See enclosed.

We have had the most extraordinary oceanic waves here as you will see from the enclosed. I have given two lectures on them but the first only is printed.⁴²

The further facts in addition to the first lecture are with regards to the diff. of time at which the waves impinged on N.Z. & Australia, as compared with the Chatham Isds. The first was 5 hours & the second 1 3/4 hours. The spreading out of the waves & amplitude thus indicated give the seat of disturbance at about 2,000 odd miles to the ESE. of N.Z. There is no doubt that old Erebus and Terror are hard at work, as several smart shocks of Earthquakes during the past year have coincided with great storms from the SE which is a rare quarter. From the first time Icebergs have also been seen further NW. than usual, I think that there must 1st be more Ice disengaged & 2nd that the NE Polar Current that should pass to the East of the Chathams is nearer N.Z. than usual giving rise to continued bad weather.

We have had little else than winter weather for the last 12 months. Everything is up set by a great banquet to Sir Geo. Grey to which I must be off.

I will write again in the evening if the mail does not close.

Sincerely Yours

James Hector.

66: Hector to Hooker, 8-10-1868

Kew DC 174, 535-536

ATL Micro-MS-Coll-10-16, 617-621

Wellington N.Z.
8th October 1868

My dear Hooker,

By the Brig *Brisk*[?] which sailed on the 15th of last month I sent you two Ward cases of plants which I hope will reach you this time in good order. I also sent a lot of seeds by Sir George Grey.

⁴² James Hector, 'On the recent Earthquakes and Wave Phenomena observed in New Zealand', *Transactions of the New Zealand Institute*, vol. 1, 1868, pp. 93-98.

I now send some of the answers I have received officially as to the habits of the Native women in labour & have no doubt that more will come in.

The institute has been flourishing & our first volume will soon be out. We got the vote last night even in the midst of all the troubles of the poor colony.

Travers gave us a capital lecture on the Economic Botany of the Islands & broached some new views respecting the origin of the Alpine Flora. I am sorry it has not been printed in the papers yet. I send a few notes about the connection between our late tidal waves & the Earthquake in S. America. Also a little slip which you might stick in some scientific journal to show what we are about.

I enclose also a *Veronica* which I got two years ago at the Bay of Islands but not in flower & brought[?] plants of which this is the first flower.

I have all the Native shrubs as they come in flower placed in the museum.

I hope that the meeting of the Brit. Ass. was a success. I look most anxiously for news of it.

Ludlam is very anxious to get some *Picia* seeds.

All the best lot of seeds are planted out (that you sent) to the number of 150. We have got the Domain Act passed which is the first step towards a Botanic Garden.

Mantell gave us a very good lecture on the Moa the meeting before last. He wont admit Owens species to be good & says there were not more than three kinds & that *Dinornis* as per skull [?] has never been got in the South Island. This is a horrid scribble but I must send it or none. I am not well having a little touch of a fever that is going about.

Affectionately Yours
James Hector.

67: Hector to Hooker, 7-11-1868
Kew DC 174, 531-534
ATL Micro-MS-Coll-10-16, 609-616

[Wellington?]
7th November 1868

My dear Hooker,

I have only this morning received the Athenaeum & read your splendid address. Many thanks for it as it is full of practical advice to a poor out of the way worker like myself. It embodies the most common sense system of scientific Philosophy I have ever heard or rather read for I sincerely regret not having had the good fortune to hear it. Your hints about Museums I will treasure[?] up & apply when I can. I have taken the opposite course to what

you recommend by having had a Board placed between my museum & the Ministry of the day, but in the Colony the circumstances are different & otherwise there would have been difficulty in getting the money vote discussed except as a party question.

I wish some of your Prehistoric friends would come out here before it is too late & study the Early traces of the Maories & make collections & drawings of the obsolete & existing forms. They will never understand all conditions & habits indicated by the Danish Manuals[?] otherwise. If I had all the recent papers sent to me & any questions as to how to observe I would try to take the matter up but our library here is very defficient in such works.

The session is just over here & I am going to start for the South & have a look at the Spencer mountains in the Interior district of Nelson. They have never been examined. I will have a broken time of it this summer as at the end of the year I am to be married to the eldest daughter of Sir David Monro (Dr. Monro of the Fl. N.Z.) at Nelson & then mean to have a trip over to Sydney & Melbourne. If I can get back in time say the middle of February I mean to have another try at Ruapehu in the Middle of the Island provided that the Natives are quiet. They have been eating some folks lately & behaving in a disagreeable manner otherwise – perhaps my young wife wont be induced to trust me among the savages so soon.

I enclose a Photo. of myself with the young lady attached & beg that you will introduce her to Mrs. Hooker with my kind remembrances.

I enclose an ----- plant common about this place which none of us know. [*Other hand:*] *Libertia*.

It is very difficult to --- & may have escaped special notice on that account. Buchanan has made a drawing of the Flower. Also I send a *Celmisia* (*Gnaphalium prostratum*) that was got 2 years ago in Mt. Egmont without flower & has this year flowered for the first time in Mantells garden. Buchanan says it is new.

Ever Your Affectionate friend
James Hector

Dr. Hooker, F.R.S.

Out of the 135 kinds of seeds you sent 42 are now up but the ---- in the green house seem to prefer the strangers & any thing else. Ludlam always asks after the Rhododendrons.

68: Hector to Hooker, 3-12-1868
Kew DC 174, 537
ATL Micro-MS-Coll-10-16, 622-624

Nelson
3rd December 1868

My dear Hooker,

I have only a few moments before I start up the Dun Mountains for a few days to say that I have received your short note forwarding a copy of your splendid address. I value the note as it shows that you do not forget me even in the great press of business that you must have had at the time.

I am going to lecture here in a few days & will introduce what you say about Museums with effect.

I have no news at present. I am staying here with Monro who is to become my father in law on the 29 inst. I have Travers' son collecting in this district this summer & expect he will get some good Alpine things – if not new at least interesting for the localities.

Acclimatization is in great report here. ----- will ---- ---- & all the common English birds are to be met with in the open. I heard larks singing to day in the fields for the first time since I left home. The Rooks are sadly puzzled for twigs to build with as the manuka (*Leptospermum* was too hard). The difficulty was overcome by Mr. Huddleston standing on a packing case & pair of steps & handing up properly prepared twigs to the male bird who passed them on to the hen bird. This went on for several days till at last they produced a servicable nest among them in which several eggs were laid & hatched. This is a first & is worth telling Darwin.

Ever affectionately Yours
James Hector.

69: Hector to Hooker, 26-12-1868
Kew DC 174, 538
ATL Micro-MS-Coll-10-16, 625-627

Newstead, Nelson
26th December 1868

My dear Hooker,

An extra steamer to catch the Suez mail gives me an opportunity of answering your notes on 16th & 30th Oct. and of saying how pleased I am at your confidence in me in consigning your son to my care.⁴³ I will do all in my power to see your wishes carried out

⁴³ Hooker to Hector, 16 October 1868, "My eldest boy Willy, has weak lungs, & is ordered on a Sea voyage to New Zealand if possible – he probably sails in 3 weeks for Canterbury in the *Matoaka*." 30 October 1868, "I put the lad unreservedly into your hands."

respecting him, and Monro says he will help with advice & influence to ensure his being properly looked after.

I am to be married in a few days but will be back in Wellington & be able to make Willy feel quite at home when he arrives. I don't think Kawau would suit him at all.⁴⁴ By good luck I have been able to consult some Taranaki folks viz. Judge Richmond & his mother who are old Taranaki settlers about the Wicksteeds & this report is not at all favourable.⁴⁵ The family ---- are supposed to be farming right on the border of the Wanganui Country where the fighting is going on & not doing well. I have already thought of several others & better chances & will make arrangements at once so that it will be all planned before he comes out. Even if I happen to be away from Wellington I have plenty kind friends who will be very glad to take care of Willy till I return. Many thanks for your long gossip which I will answer by Panama mail. I only write now to make sure that you may be relieved from curiosity.

Give Mrs. Hooker very kind regards and tell her to feel at ease about Willy
In haste your affectionate friend
James Hector.

70: Hector to Hooker, 3-1-1869

Kew DC 174, 539

ATL Micro-MS-Coll-10-16, 628-634

Bearcroft, Nelson
3rd January 1869

My dear Hooker,

I wrote you a short note by the Suez mail the other day to say that I had received your letters of 16th & 30th Oct. last and to assure you that all in my power I would do to ensure the comfort & advancement of your son. I am at present rustivating for a short spell after my marriage which took place last week but I will be back in Wellington long before the *Matoaka* arrives in Lyttelton.

I quite agree with what you think the best treatment for him and as soon as he lands I will examine his chest carefully (I have had a good deal of that work of late) and if I find that there has been no breaking down of tubercular or such like mischief begun during the voyage I will get him on to a station where he will be comfortable without luxury.⁴⁶ At first in Wellington he will be as comfortable as I can make him in my house and I need not say that my wife will do all she can to make him feel as if at home again.

⁴⁴ Hooker to Hector, 30 October 1868, "[Grey] very kindly urges my sending Willy at once to his place, & letting him live at his house & learn farming."

⁴⁵ Hooker to Hector, 16 October 1868, "My governess, a Miss Wicksteed a most excellent person, has relatives at New Plymouth."

⁴⁶ Hooker to Hector, 30 October 1868, "I have detailed the whole case to him also & especially my earnest wish to have the boy put to some useful work as soon as possible."

I will write to you at once on his arrival & report on him. I have already told you how highly I value the confidence you show in me by placing the youngster in my care. I hope you will tell Mrs. Hooker that I will spare no trouble to do well by him & I feel sure that there are lots of other persons throughout the Colony who would take almost an equal interest in him as your son.

Of course you cant expect me to write about science under the present circumstances even if I had time which I have not by the mail. Mrs. Hector timidly offers her regards & the best wishes of the season along with mine to Mrs. Hooker and yourself. You will accept this for my sake & her fathers. She must turn neophyte in science I told her.

Affectionately Yours,
James Hector.

30 Jany. Owing to the confusion of the mails from the breaking up of the Panama Co. I am able still to add a few lines to my last note to say that since my return to Wellington the other day I have recd. your welcome budget of Nov. 10th with the enclosed lists of things which I am to expect. The gift to the museum is a most munificent one & I have at once ordered cases for the proper reception of the collections. The live plants will be very welcome & I have put Ludlam on the look out for his share of the Rododendrons.

Now with respect to Willie regarding whom you are most anxious to hear. The ship has not arrived but is expected about the 15th. At that time I hope to be in Lyttelton but if not Haast has written to me that he will take good care to make the lad comfortable.

I have already disproved of the Wicksteeds as not suitable for him.

I know the Ingles' well. They are first rate fellows. Hard working on rather a poor but improving run on the seaward side the Kaikoras. They are doing well considering the dark times and are very steady & plain in their mode of life.

I am writing at once to Harry Ingles to urge them that if I find Willy is strong enough they should take him in hand. There is not a more healthy part of New Zealand.

Now that is all that I can say till we see him. Mantell, Ludlam, Haultain (the Defence Minister) Judge Johnston & lots of others are all on the outlook to be kind to him for your sake. I fear it will be difficult to get some of your desiderata but will do our best & they are already in hand.

I have most of the Coniferae you want as I brought a large consignment over from the Nelson Mts. the other day.

I have just had a haul from 37 fath: off Whanganui & got a dredge full of corals &c. that we half thought were not only extinct but confined to the older Tertiaries which I before told you extend into the interior & to an alt. of 2700 ft.

I am sending a set of both recent & fossil to Alman[?] & a case with all our recent & Tert. fossil shells has already gone last month to the Secty. of the Geol. Soc. Ask about them like a good friend & get some one to ---- them.

71: Hector to Hooker, 12-2-1869
Kew DC 174, 542-543
ATL Micro-MS-Coll-10-16, 635-639

Wellington
12th February 1869

My dear Hooker,

I have just recd. a Telegram from Haast to say that your son will be here this afternoon. I hope he will arrive in time to allow of my writing to you again before the mail goes to report as to his health.

We have a nice room ready for him & till I get him settled he will be most comfortable here. I have written to Harry Ingles and think it very likely that he will agree to give Willy a run on the Kaikoras, for a time at least till he tries the life. Ingles is a firm manly fellow – hard working living a rough life without any roughness or crassness.

I enclose a copy of a note I have recd. from Mrs. Wicksteed. I dont think that their offer would do at all as the life on that frontier is & will be miserable for a long time. Besides like we distrust our---- by badly disciplined military the town is far from good.

I am going South to Otago in a few days & in that time will most likely have heard from Ingles & settled your boy.

We had a meeting of the Phil. Soc. the other night & I enclose an extract from the report which may interest some of your friends. The volume will be out very soon for last year. It looks very well though great allowance must be made for it being the first attempt.

Sincerely Yours,
James Hector.

[*Letter attached*]

Wanganui
18th February 1869

Dear Sir,

A letter lately received from a niece of mine Miss Wicksteed residing with Dr. Hooker at Kew informing me that his eldest son who is rather delicate will arrive, consigned to you on the *Matoaka* some time during this month, that he wishes to turn his attention to sheep farming and out side occupations, his health not allowing him to study.

Dr. Hooker requested my niece to write to me thinking one of my sons might possibly be willing to take him on their farm. I have seen my son John Tylston on the subject. He and his wife are willing to receive the lad, attend to his health and try to make him happy, provided Dr. Hooker will allow (as my niece says he is willing) £40 for his board during the first year, after which some other arrangement might be made. My sons farm has never been injured by the Maoris during the Wars, but being at Kai Iwi it has become necessary that all

the women & children should all be sent into town; accd. until it is considered safe for them to return to their homes, of course he could not receive an ----- . We all hope however that that time is not now very far.

My son's farm consists of about five or six hundred acres & as many sheep & some cattle.

Dr. Featherston or Captain Sharpe would kindly give you any information you might wish.

Hoping the young man may arrive safely.

I remain Sir

Your obedient servant

(Signed) --- Wicksteed

Dr. Hector.

72: Hector to Hooker, 22-2-1869

Kew DC 174, 544-545

ATL Micro-MS-Coll-10-16, 640-642

Geological Survey of New Zealand
22nd February 1869

My dear Hooker,

Willy arrived here on the 13th in good health and spirit. We have enjoyed very much having him with us during the last week and I fancy he has enjoyed himself also. Haast was very kind to him and forwarded him on promptly by the first chance. At the Museum he has made friends with everyone and I introduced him to the Governor, Mr. Stafford, Ludlam & lots of other people who may hereafter be useful to him. I need not say that as your son everyone was glad to see him. My principal duty will be to prevent his being spoilt.

Haultain retd. a few days ago. He is at present Defence Minister and has travelled about a good deal in a little Govt. steamer (*Sturt*) and manages to do a good deal of dredging whenever he can. Until we can arrange something for Willy he has very kindly taken him on board the *Sturt* as a companion to his own son of the same age.

They started the day before yesterday for Whanganui and will be away about a fortnight. He will be very comfortable as they will occupy the Govns. state rooms. I have often travelled with the *Sturt* and liked it much. Everyone on board is full of zeal & there is a capital skipper. Buchanan has gone this trip to collect a set of the Pliocene Tertiary fossils & he will be a good companion for Willy who has gone off armed with a quantity of drying paper, ----, & tin box & is determined to send you home a collection of plants with a new one among them.

I have observed the youngster very carefully – walked up hills with him and otherwise tested him and have seen nothing to warrant my diverting his attention to his chest by auscultation. He seems to have forgotten all about his illness and it is better to leave him so. I don't believe that there is any weakening beyond that incident to ---- ---- faith.

He had commenced a letter to you but had to start off in such a hurry that he did not finish it. I promised to enclose it to you. Having glanced at it I must warn you not to infer that he has only some two men from the museum here and that he has to escape to the hill and live on watercresses.⁴⁷

I am sure you will be relieved when you hear of his being so well. I am just starting for Otago & will be away for some weeks – however he is in good hands. He is much younger than his years so he is in plenty of time to live colonial life if he takes to it.

Mrs. Hector keeps him in great order & flies at him if she sees him sitting on the ground or otherwise endangering himself according to her notions.

With kind regards to Mrs. Hooker, Believe me
Your affectionate friend
James Hector

Thank you for the seeds. I have distributed them in four lots. No sign of the *Cambodia*.

73: Hector to Hooker, 14-5-1869

Kew DC 174, 546-550

ATL Micro-MS-Coll-10-16, 643-655

Wellington
14th May 1869

My dear Hooker,

I only returned about 10 days ago from the South where I was spending six weeks among our Secondary Rocks. I found Willy in good health & capital spirits, Judge Johnston & his wife Col. Haultain & a lot of other kind friends had done everything for him so that he might not weary.

He has several new companions and he has quite taken to collecting ferns & shells. As to his future I have had a talk with Haultain who had good opportunities of observing him when he was travelling about the coast in the *Sturt* (Gov. Gun boat) and we both agree that it will not do to put him on a run. He would have no comfort & would have nothing but mischief among shepherds & other rough folks.

⁴⁷ William Hooker to Joseph Hooker, 19 February 1869 [available in Hobbs & Yaldwyn], "On Saturday 13th I arrived at Wellington at about 3.30. There were two men from the museum who met me in the steamboat. On Sunday & Monday it was raining but on Tuesday I took a walk by myself up the highest hill that was near and came down by a steep valley, following the course of a little stream and out of which I had a good feed on watercress & plenty of running water to drink."

He has no cough or pain and has a good appetite – but the least over exertion seems to bring on languor that shows he is not in perfect health. He's very thin but has good colour & a firm springy step. I have examined his chest & except rather deficient energy in the action of the muscles of the chest there is nothing remarkable. I doubt that he is at all so stupid as you tried to impress on me. He is very independent & reserved – but yet lacks confidence of manner – which can be better ----- in a Colony than any where. In fact self arrogance is rather too easily picked up in the colonies.

In endeavouring to carry out your wishes therefore I have to consider 1st his health is improved & improving and that the change is doing him good & should be continued for some time. 2nd That his health wont warrant his being exposed to such hardships as he would experience on a sheep run – especially in wintertime. 3rd. That he must not remain idle & that his time will be most profitably spent in acquiring colonial experiences, ie. roughing it but without risk to his health.

Your estimation of Kawau, based on Sir. Geo. Grey's account is much too highly coloured. The island is let to a friend of mine (Holt) who has a profit to make out of it and who works very hard. He has a nice wife and one son, a good deal younger than Willy. They have a comfortable Home and I have no doubt that he could keep Willy in work – driving stock & doing odd jobs about the run. The advantage over a South run is that Willy will be more comfortable and will learn as much without such hard work.

I therefore think of sending him there for the winter on trial if I can get Holt to take him. Haultian also thinks this is the best plan. I hope you will approve.

I will have to draw on your credit if I send him North. Up to now he has only cost you some £5 or £6. By the way you say the credit is in favour of John not James Hector which is my name. Please put this right.

By this mail you will get the Vol. I of our Transactions.

The principal news is the discovery by Hood who goes home by this mail with them of a large number of Saurian bones at the Waipara. They are associated with our older Brown Coal. I know the place & got some of the bones 2 1/2 years ago & made a section of the beds – but a recent flood has exposed this fine collection of heads, paddles and lots of vertebrae, all of which are on their way home to Owen. It will be a great help to our classification of Strata. I got a splendid section in the South for the Brown Coal down to the Triassic beds with fossils. I got *Glossopteris* in our lower Carbonaceous beds. I have just been unpacking the case of museum specimens you sent. They are very fine and I will take care that they are shown to advantage. Out of your two cases of plants only some 5 plants were alive. The vessel took too long. Haasts were all alive when they arrived but he says they have since died – very unfortunate.

I have distributed your seeds in all directions – Mantell & Ludlam & the Curator of the Botanic Gardens are giving them a good trial – but they are not very hopeful.

Very affectionately yours
James Hector.

[Letter attached]

Kawau
24 May 1869

My dear Hector,

I received your note about 5 or 6 days ago, but I have had such a lot to do with --- --- -
---- visitors, I really have not had time to answer it before. I dare say you will have heard that
the whole Fleet has been for a week at Kawau to hold a Court-Martial. The Duke was on it,
so we did not see so much of it as perhaps we could have wished. One day they landed about
500 men from the different ships that ----- The Duke, the Commodore, Lord C. Beresford &
Capt. Mont----- of the *Blanche* dined with us one evening which I believe we all ----
pleasantly – at any rate they did not leave till after 12. I dined twice with the Duke & I
suppose I have seen a good deal of him. Not having ----- much of any time with Princes of
the Blood Royal. I don't know exactly whether one Duke is above or below the general
average of those kind of people – but as an ordinary individual I should call him an agreeable,
pleasant mannered fellow. He can tell a capital story when he likes.

And now to business. Before I got your note I had received a letter from Sir. George
Grey asking me to take the son of a friend of his (Colonel George) as a Cadet and I believe he
would leave (from England) for Kawau about the 22nd of last month. ---- ----- taking young
Hooker will of course put us to a considerable amount of additional trouble & expense –
besides, as I dare say you have found out, one does not as a married man care about having
strangers in company every evening. However I must make the most I can out of the place, as
I am supplying a great many men so as to get as much land into grass as quickly as possible. I
will therefore if you like take your young friend for as long a time as he, you or his father
thinks proper for £150 a year, but I must have the first years' premium in advance. He will of
course live in the house with us & he will have a comfortable bed room to himself. You know
Kawau, so I need not tell you that sheep farming at present is only on a small scale, but I
hope to increase the Islands' capabilities in that respect very much before long.

If you agree to the above terms, you may send him to me when you like & I will do
the best I can to further his interests & your wishes.

The Cutters *Ringdove*, *Wanderer*, *Orpheus* & *Margaret* are constant traders to Kawau
from the Firewood wharf just below the Club. The *Margaret* a very subsidised[?] boat, but
any of them will bring him to Kawau, so he need not be detained more than 48 hours in
Auckland at the outside.

Mrs. Holt joins me in kind regards to Mrs. Hector & yourself
& Believe me
Yours very faithfully
Holt.

74: Hector to Hooker, 6-6-1869

Kew DC 174, 551-554

ATL Micro-MS-Coll-10-16, 656-665

Wellington
6th June 1869

My dear Hooker,

I have first to report that Willy is well – I did think better than ever – but last night he came & told me that he feels as he did before the attack he had at home & that he has brought up a little blood. I dont find any symptom of fresh mischief & dont attach much importance to the matter. I fancy he would not have mentioned the matter had he not met the Dr. of the ship he came out in yesterday as he was passing through on his way to Auckland & who foolishly told Willy that he was not so well as he used to be on board ship and that the sea agreed best with him. However there it is & the feeling of insecurity rightly or not has been given to the boys mind. It was pretty well worked out of him & he was walking about collecting ferns & eating & sleeping as well as possible. All this has confirmed me in the opinion I had formed after getting the two letters which I enclose from Capt. Holt in Kawau & Ingles at the Kaikoras. Viz. that I should send him back home to you & advise you if the voyage again sets him up to keep him permanently at sea. He has a great fancy for the life – only he has of course some notice of its rough sides.

At any rate I can see he will do no good out here. Had times been different there might have been some chance of getting him on some nice station in the North but the state of the country puts that out of the question. This is gripping many people very hard and the easy life of the runholders is sobering down to a stern struggle for existence.

I will therefore send him back to you whenever there is a favourable opportunity and will take every care that he is comfortable & safe. Meanwhile I am going to send him another voyage in the *Sturt* gunboat if she comes in as Capt. Fairchild will take good care of him & keep him employed.

11th Willy goes tomorrow in the *Sturt* on cruise along the East Coast & seems to be full of spirits at the idea of it. He will touch at lots of places of interest & will not be in any danger. I am to pay Capt. Fairchild £8 p. month for his keep &c. but it will not be for long. He has plenty of outfit & up to the present time has not cost you more than £5 or £6.

I send you some Reports this mail. Especially the Meteorological Pamphlet which I wish you to send to the Kew Obs. & ask them as a particular favour to send me the Meteorol. notes[?] (monthly measures or even daily) for the last few years (say 10) in England. I have a particular object in view.

I have the observatory almost complete now. The Transit will be placed in about a month & we will be dropping time Balls all over the Colony from this place.

The Kew Collection is now set out in a Counter Case of shape like an elongated truncate Pyramid 12 by 5 with sloping glass sides. It holds it mainly & the collection looks very fine. I dont like to beg but I wish I could get a set of the furniture Woods for comparison with our own. Have you a Catalogue of the Kew Museum in Print? I would like to see it.

I went over to the Botanic Garden today & find that a good number of the last parcel of seeds you sent over, coming up already. The beds sown out with your seeds alone cover 1/4 of an acre. It will be a great pull for us if they do well. We have 5000 Native shrubs all in good order for planting out or putting in Ward cases for exchange.

The principal addition to the museum lately has been a fine collect. of Native Birds Nests & Eggs & the skeleton of an Elephant – that died from eating tutu (*Coriaria*) in Otago.

Also a lot of the Reptilian bones from the Waipara Beds – our Wealden. The Grey & Buller Coal belongs to the same saurians. The great cataclysm that upset the older rocks to form our Mt. Masses took place before that date, as all disturbances of these & subsequent beds are local only.

I enclose some letters of Willys.

The Assembly is in session & a great party fight comes up next week. The session of the Institute begins next week & Saturdays are to be the lecture nights.

Ever affectionately Yours
James Hector.

One of your Ward Cases is full for return, & some in the other lots[?] of Alpines



One of the wind & sand worn stones which I described as found on the coast near Wellington at a meeting of W. Phil. Soc. in Feb. last.⁴⁸ This is a nice pocket specimen but undoubtedly formed out of one of the stones originally used for cooking by the Natives, but solely by the function of wind blown sand.

J Hector.

⁴⁸ See Vol. II Transactions of the New Zealand Institute, 'On the Sand-worn Stones of Evans' Bay.'

75: Hector to Hooker, 9-7-1869

Kew DC 174, 555

ATL Micro-MS-Coll-10-16, 666-668

Wellington
9th July 1869

My dear Hooker,

I heard from the Capt. of the *Sturt* the other day by telegraph to say that Willy is quite well & still with him enjoying himself very much.

He has not written to me since he left, but no doubt he is living like all boys. I trust that you will hear from him however.

My wife has just lost her brother. It is a sad blow for poor Monro as he was a lad of 22 who had shown great promise at Oxford & only came out to the Colony a few months ago.

There is nothing but political news here which you dont care for.

You will get a progress Report by this mail. I have Buchanan now at work painting all our fossils on stone & I must make the best shift I can for provisional names. It is quite astonishing the large number I now have from all formations.

I have made out undoubted Trilobites the other day. With the Reptilian bones (Wealden) I have a spiral whole of the same leaves which you said were *Dammara*. There is no doubt that these Reptilian beds are of the same age as the Buller Coals. Be sure to go & see Hoods' specimens when he gets home & look at the Fossil Plants along with the bones.

In haste
Sincerely Yours
James Hector.

I was going to write more but you will be in St. Petersburg.

76: Hector to Hooker, 8-8-1869

Kew DC 174, 556-558

ATL Micro-MS-Coll-10-16, 669-676

Wellington
8 August 1869

My dear Hooker,

Willy has returned from his cruise and looks much improved, he is filling out fast & becoming more manly. He has left all his clothes in the rain so that I have had to get him new garments.

I still think of sending him home as I don't see any chance for him out here. He takes after the sea – of late he has been working the Engines on board the *Sturt* & the Capt. says he already knows more about them than many fellows who have been at work for years. The *Challenger* (Commodore's ship) was going home & I thought of setting him on board of her – but I fear I will not be able to. A very good ship the *Veritas* has just arrived & will sail by way of S. American Ports for London in a month or so. I will find out all about the Capt. & crew & if favourable will ship him by her.

I enclose some clips from papers to show that we are still alive. The Institute is a great favourite. By the way I have been keeping strict record of all our Earthquake shocks since Janry. 1868. Before that the newspapers never said anything about them – but since the Telegraph has been completed thru the Islands the clerks have strict orders to file notice of shocks at once to the head office & they are sent on to me, so that I have a chance of making enquiries at the time by telegraph & finding out where & where not the shock has been felt.

I find that there are two distinct kinds. Those that are local & felt a slight tremors at Nelson, Taranaki & sometimes at Wellington & Napier but not at the same time or are perceived[?] at all of them. I find no regularity in them at all. The second kind are those which are felt almost simultaneously throughout the Islands from N. to South. These are in 8 out of 11 cases coincident with Eclipses of Sun or Moon visible on some part of the Earth in the other two coincident with a very near conjunction of Sun & Moon & in one case original. Out of the Eight I find that 6 were felt either California, Pacific Islands or South America. The two heaviest shocks were on 11th Feb. & 17th Aug. /68. Both of them were felt in South America & stirred up the volcanoes in the Pacific Group & were coincidental with Solar Eclipses. I dare say it is all well known to some but it is a new idea to me – as Mallet says that there is no clear proof of any coincidence between the Phases of the moon & the occurrence of Earthquakes. Now I can easily imagine that N.Z. will be a favourable place for observing as it is an isolated ridge standing out of deep water & being right across the path of those great longitudinal shakes which is for E. 34°S.

There is an Eclipse going on just now viewed in the N. & we have had our usual shock felt from the extreme N to the South by telegrams just recd. Another curious point is that when the Sun & Moon are in opposition (Full Moon) the shocks seem to be felt in the South most severely where the whole mass of the country is formed of crystalline rock.

At New Moon they are felt most[?] sharply in the N. where Volcanic & Tertiary rocks cover the older rocks to an enormous depth.

If there is anything in all this that is new I will put all my facts together, so don't say too much about it.

You will see that I allude to the nature[?] of Rock basins in Otago in my last progress report. Folks don't like it as it argues against the probable connections of deep tracts of Gold.

We are in a great political mess here & you will hear very exaggerated stories about the dangers from the Natives no doubt – but they are more political in their origin than true. Still the Natives do look ----- at present.

Ever Sincerely Yours
James Hector.

I have a sore hand which makes my writing worse than usual.

77: Hector to Hooker, 3-9-1869

Kew DC 174, 559

ATL Micro-MS-Coll-10-17, 1-6

Wellington
3rd September 1869

My dear Hooker,

Willy was back a few days ago & seemed well & in good spirits. He likes knocking about in the *Sturt* and I don't see that he can do any thing better in the mean time.

The ship I thought of did not prove desirable to send him home in so she has just sailed without him.

There will be no other for some months from this but I ---- ship him for Auckland.

I hope to hear from you by the incoming mail however about his plans.

I have to start suddenly for the South so that I can't send you any news. I have been lecturing every week – horrid work. I send you slips always. You might perhaps get them put in abstract in some of the home journals. They seem hard up sometimes. I send you a debate on Flora in the House here. It's not often that they do botany there. We have got the Botanic Garden Bill through.

In haste
Your affectionate friend
James Hector.

78: Hector to Hooker, 3-10-1869

Kew DC 174, 560-563

ATL Micro-MS-Coll-10-17, 7-15

Wellington
3rd October 1869

My dear Hooker,

I was rich in getting two most interesting letters from you by last mail. You seem to have made the most of your time when on your visit to the Czar.⁴⁹ It almost feels strange to me to read of these grand things now.

So far as Willy's health is concerned the object of your sending him out is certainly attained. He is off again in the *Sturt*, with the Governor on board for Auckland. He is quite strong & lusty – but I cant hit on anything for him to do. You judge his character quite as an outsider like myself sees it. There is no fixing him to work. There is a splendid ship & Captain going in Decr. & unless I hear something from you or a chance turns up I will ship him back to get a little more drill at home.

The cheque is all right but I will not draw on you yet. I have only disbursed a very small amount (15 or 16 £).

I have just returned from Canterbury where I have been at work since the session – very soon I will start for Auckland overland if I can in order to see what foundation there is for the popular believe that the Gold can[?] be found throughout the length of the N. Island.

You will be glad to learn that about half the things that were reported to have arrived dead by the *Cambodia* have revived & are doing well. (In Canterbury they got all alive & now all are dead.) Ludlam keeps always at me to beg Indian Rhododendrons. He says there was not anything in the last cases he would care to have as he had lots. He is very hard to please, so I have got him to make out the enclosed list. We are busy fencing the New Domain. If we can only get a little money, in time it may be made one of the finest in New Zealand.

It has beautiful sheltered[?] gullies with Native bush & has just been enough broken in on by cattle to spread a dense green turf all over the surface. It varies in altitude to 300 ft. & has every kind of soil & exposure.

I have a nursery almost fenced in & about 5000 plants ready to put out. About 1/2 of your seeds are up. I wish you could spare us some more, especially of Pines.

Can you get me some seed of the Canadian Service berry (*Amelanchier canadensis*). My old friend the miskask-kitomina. It would be a splendid scrub for our hill sides.

⁴⁹ Hooker to Hector, 9 July 1869, "We returned 10 days ago from St Petersburg & Moscow having come round by Sweden, Denmark, Hamburg, Hanover & Holland."

Your Ward Cases will go back in the *Halcyone* under care of Capt. Bishop who is a very careful man and takes an interest in that sort of thing. If you can refill them in time for him to bring back everything would have the best chance.

I have made enquiries about the postage being charged on your letters & cant make it out.⁵⁰ I have a right to frank which Sir Geo. Grey obtained for me on purpose to allow me to send letters & parcels from to England & to every part of the Colony. The P.O. people cant understand it unless you are charged for the inland postage. What shall I do? Say what amount you have to pay on letters & I will find out. I am very much disgusted about it but obliged to you for telling me, as I may be inflicting a serious tax on my correspondents without intending or know of it.

I will be glad indeed to get Geol. Tracts & anything else you can spare for the Museum or library.

I shall frank this as usual, by advice of the Under Secty. for Postal Dept. as he is going to make enquiries. Send me back the Envelope if they mark on it everything to pay.

Your affectionate friend
James Hector

You will be glad to learn that 75 % of the seeds you sent for the Botanic Garden have come up in the nursery. We are fencing in 40 acres of most beautiful gardens & grass hills commanding a view of the Harbour. We got an act through last session putting it under the control of the Govnrs. of the Institute.

Out of the case that came in the *Cambodia* I have in my garden three[?] of the Rhododendrons in flower & the *Araucaria* & some others doing well. You will remember that Ludlam gave them up. He had your Rhododendrons *Dalliouscaria*[?] from Sclater[?] in flower this year. I got some Cork Oaks, Tea & *Cinchona* plants. The two latter[?] are doing well but the *Cinchonas* turn brown[?]. They do better out side than in however.

At our last society meeting of the Phil. Soc. we had a long paper on the Flora of the Colville Peninsula by Kirk. I enclose a slip of the meeting. I see that Haast sends slips of the Canterbury society to Grey[?] who puts them in the *Scientific Opinion*. I would be glad if you could pass the slips I send, on to any publication that will notice what they think worth while. It would greatly strengthen my hands. I have sent you a report of every meeting, always by the first mail after. If you can find out which periodical would like to get the slips I will send them direct – but in any case I feel ashamed to bother you in the matter.

J Hector.

⁵⁰ Hooker to Hector, 16 July 1869, "Your letters marked "On Service" are charged by P.O. – it is no matter to me, but you may be glad to know."

[Note from Ludlam attached]

Hutt
29th September 1869

My dear Hector,

I send you a list of varieties of Indian Rhododendrons for you to forward to Dr. Hooker if you think he would refill one of the plant cases you intend sending with them, this climate seems peculiarly adapted to the growth of the Indian varieties and a good collection would be a great addition. I have mentioned the roots I have that he may know what at present is in the country. They should be sent in pots being the safer way.

Believe me
Yours very truly
A. Ludlam.

PS I selected the names from Paxton's Botanical Dictionary and one of the London Nursery Catalogues.

Rhodon. arboreum, album

cinnamomium

rollissonia

argenteum

aucklandi

barbatum

campanulatum

ciliatum

campbellii

fulgens

glaucum

hookeri

jenkensi

nuttalli

princess royal

thompsonia

veitchianum

arboreum paxtonia

I have growing

Rhodo. arboreum

roseum

falconeri

calyophyllum

gibsonii

limbatum

dalhousiaeum

79: Hector to Hooker, 31-10-1869

Kew DC 174, 564-565

ATL Micro-MS-Coll-10-17, 16-18

Wellington
31st October 1869

My dear Hooker,

I have your two letters of 6th & 13th Augt. They made a long journey to Auckland & back before I got them. I have the letter for Willy as I expect him back very soon. When I last heard he was very well & enjoying himself very much. He soon got over the slight return he had of the Haemoptosis, the news of which had just reached you when you wrote last, but before this you must have received my letter relieving you from alarm.

If I could see any work to put him to out here I would not send him home – but I dont know what to turn to. Office work would not suit him that is clear. I can feel now for your anxiety as I also have a son – born on Monday last 25th Oct, both mother & child doing well.

If anything turns up for Willy before the *Halcyon* sails in the middle of Decr. I gather that your wish is that he should remain in the Colony for a while yet.

I shall be off soon again towards Taupo – but we have had most fearful weather during the past month 13 inches of rain as against the usual October average of 3.3 inches.

I am sorry for Haast – but he should go to Germany or Austria – that is his proper field for reaping his reward.⁵¹ I fancy a good many here think he has worked harder as jackal for the illustrious continental Journals[?] who repay him with ribbons[?], than he has for the Colony. Whatever any real worker does is drafted to Germany without acknowledgment & as we dont get or cant read the German periodicals we never hear of the filching for years afterwards.

I enclose the only Institute lecture since last mail by Travers – being his second on the influence of man on the vegetation &c. of N.Z.

I have no particular news in the way of science. The Vol. II of the Trans. is getting on but wont be issued till May.

Ever affectionately yours
James Hector.

⁵¹ Hooker to Hector, 13 August 1869, “Poor Haast writes to Murchison seeking other employment, & to me to back his application – I write by this mail, that I fear there is small prospect of a good appt. that such are fast “closing up” in the Colonies, that it is a serious step with a wife & young children to leave a Colonial appt. & a sphere you are known in for the risk, discomfort etc. etc. of another sphere & life. He had far better put up with a minimum where he is – he asks about appointments in China or Japan! – I fear he is awfully unpractical.”

80: Hector to Hooker, 1-11-1869

Kew DC 174, 565

ATL Micro-MS-Coll-10-17, 19-20

[Wellington?]
1st November 1869

My dear Hooker,

Will you kindly look over the enclosed letter and read the passages refd. to & if you think it right forward it for publication.⁵² I hate doing this kind of thing but I have been forced into referring to the plagiarisms out here & feel that I should not shrink from putting it right at home. I never knew of it till lately.

J Hector.

With letter to editor of Geological Magazine on Glacial period of N.Z. [Not filed]

81: Hector to Hooker, 26-11-1869

Kew DC 174, 566-67

ATL Micro-MS-Coll-10-17, 21-26

Wellington
26th November 1869

My dear Hooker,

Willy has been back with us for some time and is as strong & well as you can wish. He has undergone a very great change for the better – stronger both in mind & body.

I wrote a letter to Capt. Fairchild of the *Sturt* thanking him in your name for the way in which he has looked after Willy – as if he was his own son & said that no doubt you would yourself acknowledge his kindness. Willy is soon to write to you about the rough kind old man.

Seeing that Willy was so well & that there is no chance of sending him home for six weeks, I took the chance of there being a very nice young fellow (about 28 or so) a M.A. Cambridge – who is employed as tutor for a small part of the day with a friend of mine, & have arranged that he shall coach up Willy a little so as to induce him again to habits of application. Willy has gone to lodge with him & though he looks serious at having to study again, I gave him a good talking to & he sees the necessity for it. Unless he takes kindly to his studies or shows any sign of breaking down again, I still mean to send him home in the *Halcyone*. But if he can improve his education with less risk to his health & at small expense out here, I suppose you would wish him to remain from the tenor of your last letter. However

⁵² Published as 'Glacial Epoch in New Zealand' by J. Hector, *Geological Magazine*, 7 (07), pp. 95-96.

I will be able to report to you by the Decr. Mail & before then I will have heard again from you.

I got advice of the arrival of the package in Melbourne which I suppose contains the Wedge wood. My wife is of course all impatient to clasp her treasures. She is very well & going about now.

Your last note was written just after the receipt of mine, saying that Willy had been again spitting blood. He has a strong idea that the sea is the only place for him & he evidently dreads staying ashore now – I mention this as worth bearing in mind.

His tutor Mr. Hardy is to drill him in Latin & Mathematics & lots of English composition. Hardy is a strong Naturalist in his way & is always out collecting in his spare time, and as he has promised to make a companion of Willy this will take the edge off the indoor work.

I intend to cash your cheque before next mail, but defer so as to make one sure in case I have to pay passage money &c.

At present I have laid out for Willy
6 months keep
money in *Sturt*: £36.4.6
Clothes, Cash &c. 24.4.6
£60 9/-

I am to pay Hardy £15 for looking after his pupil till the middle of Janry. in addition to his board which will be a little over 20/- per week. If Willy stays longer, of course I will make a more favourable arrangement. I hope I am not doing wrong in all this but I just do as I think best for your interests.

Willy will be sure to write this mail as he has a strong working fit on just now. He is a nice lad. I am very fond of him though I do the stern to keep up discipline.

affectionately yours
J Hector

Many thanks for the Pamphlets.

82: Hector to Hooker, 12-12-1869

Kew DC 174, 568

ATL Micro-MS-Coll-10-17, 27-29

Napier
12th December 1869

My dear Hooker,

I am on my way to Tongariro & the Mts. in the interior of the Island where I hope the Natives will let me do some work. We have two military ports now at Taupo and the Maories both friendlies & Hauhaus have cleared out so it is a very good chance. Before I left the other day I cashed your cheque for £100 which the bank took, although they said it was very irregular business. If I have to pay Willys passage home this will not leave enough margin but I can draw on you for what is missing.

He is working very well with Mr. Hardy who says he is improving rapidly in power of application. He has now taken a craze to get home again, but a short time since he was just as anxious to remain out for longer, so I dont consult his mere fancy on the subject. Your letters go to Auckland first in the Govnr. Bay so that I have not received your last, which you promise in your note of 10th Sept. & in which I expect a reply to my proposed plans for Willy, i.e. am I to send him home or keep him out here to study at a moderate expense. He is wonderfully strong now and if he would only work with Hardy for a year it would be better for him than trying to go back to school at home & I should think the expense to you would be less – say £100 or so.

Up to this time you must look on the

[*Copy terminates*]

[*Marginal note:*]

I hope the charge on franked letters is not continued. Please let me know. They have no right to make it.

83: Hector to Hooker, 20-1-1870

Kew DC 174, 569, 577-578

ATL Micro-MS-Coll-10-17, 49-54

Wellington
20th January 1870

My dear Hooker,

I have just ret'd. from the Taupo district, having escaped all the dangers but not done much in Geology & nothing in Botany owing to the horrid weather I experienced. I have confirmed my previous observations that the Pliocene Tertiaries that lie almost unconsolidated at the sea level & full of existing shells, have been raised like a dome in the interior to 3,000 ft. The rupture & first volcanic ejections taking place at the time of greatest depression. The Tertiary strata there sit round knobs of slate rock which formed two small patches of land representing the North Island in Pliocene times. The thickness of the Strata in unbroken sequence is 2,700 ft. but this probably includes more than Pliocene strata.

Perhaps Upper Mesozoic even. The new discoveries you mention with the dredge marks on impressions of fossils.⁵³

I found Willy quite well on my return, but though he works pretty well with Mr. Hardy (his tutor) still from your letters & from Hardys account of him I think it better to send him home by the *Electra* which sails in the end of this month.

I advised you of having cashed your cheque for £100. There is still a balance left, but to pay Hardy, some outfit for Willy & his passage will require a further sum for which I will draw on you when required.

You will find a great improvement in Willy & I think never regret having sent him out as he has got strength & learned more at less expense, though perhaps not the right things – than he could have done at home. You will find him anxious to be off again I expect. He is very unsettled. It is a pity that he has not more Nat. Hist. information. I[f] he would only work up a little I should advise you to send him out with some expedition, but till he settles down for a while at least to learn the rudiments of something he will do no good.

Vol. II of the Trans. of N.Z. Institute is well advanced. We have a splendid paper by Kirk on the plants naturalized in the Province of Auckland. It is more scientific as a work of reference this year than last.

I will try & send home some things for you by Willy & will write about them by next mail.

My wife will no doubt write to Mrs. Hooker acknowledging the Vases which I have just seen. They are the prettiest things I have seen in the Country & I assure you I feel quite proud to be able to point out such a beautiful gift as from you.

⁵³ Hooker to Hector, 5 November 1869, "The Dredging expedition has returned from the Shetland Seas with wonderful results from 5000 fathoms – cold current & cold submarine areas with cold faunas, close to warm areas with warm faunas!"

Thanks also for the Photograph. Willy says it is capital. I hardly see any change in you in the last 9 years. You dont look any older for all the huge labour you manage to get through.

With kind regards
Your affectionate friend
James Hector.

[Letter attached. Tidy hand, probably Richard Gore. Signed by Hector]

Geological Survey Office
Wellington, New Zealand
20th January 1870

My dear Hooker,

By the *Halcione* which sailed from this port for London on the 9th instant, two cases of live plants were shipped to your address at Kew and Captain Bishop has been asked to take special care of them on the voyage and also to let you know when he sails again for New Zealand, so that you will have an opportunity of returning the cases by safe hands. We have now 57 acres of Botanic Garden fenced in and 1 acre of nursery in which a large portion of the seeds you kindly sent are doing well. We have a splendid series of gullies for Rhododendrons if you can spare some common ones in quantity.

Capt. Bishop has had a place set apart on board his ship specially for plant cases so that we may hope now to receive the contents of the boxes in better order than has hitherto been the case.

Believe me Yours Sincerely
James Hector

Dr. Hooker, F.R.S.

84: Hector to Hooker, 9-2-1870

Kew DC 174, 570

ATL Micro-MS-Coll-10-17, 31-32

Wellington
9th February 1870

My dear Hooker,

Willy left us on the 2nd by the good ship *Electra* bound for London, and I expect him to be with you almost as soon as this letter. He is in perfect health and high spirits at the prospect of seeing you all again. So far as restoring his health I think you will feel satisfied with the result of his sojourn here – and in other respects he is also greatly improved. He has done well with Hardy who has kept him at study pretty close so that a good deal of the rust that had accumulated during his long holiday has been rubbed off. I had to draw on you for £75 to clear off accounts according to the enclosed memo: which I hope you will approve. Willy has a state cabin to himself and as there are only two other passengers he will have lots of sea room. The *Electra* is a very fair clipper & famous for making quick voyages.

Since I returned from the Taupo Lake district in the interior I have heard that Ruapehu (10,000 ft.) has broken out as an active volcano, but I think there must be some mistake. Tongoriro 10 miles further North (6,700 ft.) is occasionally active & always has active geysers on one side at an altitude of 4,300 ft. But Ruapehu is a respectable old Trachytic mass from which the scoriaceous envelope has long been denuded, so that I can hardly fancy the news to be correct. However the report is that on the 12th Janry. after a long spell of bad weather the clouds cleared off the Mt. and down the SE side a broad band of the snow has been removed from top to bottom, the rest of the Mt. having its white mantle as low as usual at this time of the year. I am very much pleased with the review article in the last recd. number of the Geol. Magazine by Scrope. The German[?] views of volcanic rocks which he so ably attacks are leading us all astray. Everything I have observed in N.Z. supports the geological work done by Darwin in S. America. This is an extra mail & has taken us rather by surprise so that I have not time to write fully on this subject, but it is of great practical importance as owing to the Mesozoic Porphyry view[?] of Darwin being classed by some of our Geologists in line with the Tertiary volcanic rocks, the poor folks are spending money in the fruitless search for Gold reefs in all sorts of impossible places.

When you send out plant again Ludlam asks for *Chamaerops excelsa* & *Palmetto*.

Our Trans. for 1869 are nearly printed now. I hope to send you a copy by next mail – 320 pp. Many thanks for the Meteorological papers – they came in useful. I am printing a Catalogue of the Museum & also a lot of detail Geol. Reports so that my hands are full. What a lot of sympathy the English papers are writing on our Maori troubles. They are just as usual. The fuss at home is being fomented by Sir. G. Grey & others who want to pay out the Colonial Office for past disfavours. They do a deal of harm by preventing emigration which is the only possible cure for our troubles.

Yours affectionately
J Hector.

85: Hector to Hooker, 2-4-1870

Kew DC 174, 571

ATL Micro-MS-Coll-10-17, 32-34

Auckland
2nd April 1870

My dear Hooker,

I have just come up with the mail, and have only time to send a few lines by our new mail route. I hope it will be a success as it will cure this colony of all its troubles if brought in direct contact with Yankee civilization which is far better adapted for a new colony than the English notions. Besides we will soon become independent of the Church of the Colonial Office.

Many thanks for the parcels of seeds. This time they were in splendid order. The Atlas Pines are a great prize. I sent on your letter about the Rhododendrons to Ludlam. It is very kind of you to take so much trouble.

I will try all I can to get the seeds you want[?] but I fear there is little chance this year. It is astounding how soon all the round[?] seeds disappear from the trees in N.Z. while in America they used to stick on right through the winter.

Willy will be home by this time I suppose & have told you all the news. Tell Huxley that his circular about nude Photographs of Natives was referred to me and that I have got Travers to undertake the work, and that he may rely on a fine series.

I have a fine lot of saurian bones since Hood left & have employed Haast to go on with the survey. I will enclose a map of his which shows the Geology pretty fairly next mail.

In haste
Sincerely Yours
James Hector.

86: Hector to Hooker, 3[0]-4-1870

Kew DC 174, 572

ATL Micro-MS-Coll-10-17, 35-37

[Wellington?]
3[0] April 1870

My dear Hooker,

I have not heard from you for two mails but it is just possible that the letters may have missed me as I have been away in Auckland for the last month – exploring the Colville Peninsula where the new Gold Fields are.

I send by this mail an early copy of Vol. II of the Trans. If you think it is worthy of notice it would strengthen my hands very much to see some mention made of it at home. I learn that several of the scientific Societies at home wish to reprint portions from Vol. I but I don't think I have seen a single mention made of it any where. It is not that I care, as you will know, but science needs backing to keep it alive here & nothing like home recognition for helping it.

I have taken a lot of trouble with Vol. II and would like very much if you can from your experience in such matters give me any useful hints for Vol. III.

I have only returned a short time before the mail closes. I sent Kirk an expedition to examine the Botany of the Ranges between the Waikato & the West Coast which is a Botanically unexplored district.

Have I written since I got the Atlas Pine seeds? They have given great satisfaction. The last month looks like a year to me as I have been camping out in the rebel country & doing hard work. Only once I got a good fright but no harm came to us though we camped by M----- close to part of Te Kootis land. I will send you a Report of my work when it is out.

In haste with kind regards to Willy who is with you by this time I hope.
Every Yours affectionately
James Hector.

I see you sent my letter to the Geol. Mag. about Haast.⁵⁴ It is just as well though I did write it in a pet.

⁵⁴ See letter 80 (1-11-1869).

87: Hector to Hooker, 14-5-1870

Kew DC 174, 573

ATL Micro-MS-Coll-10-17, 38-40

[Wellington?]

14th May 1870

My dear Hooker,

I only received your Febry. letter with the seeds for Ludlam yesterday, as it had made two trips to Auckland and back. There is a chance of still catching the Suez mail so I write a few lines to thank you for sending the letter to the Geol. Magazine. It is just as well to have these things out. I could not stand Haast bullying Woods of Melbourne for quoting him as an exponent of a South Glacial Epoch. In the same Vol. of the Trans. of the R. Soc. of Victoria that has Woods' paper Vol. VI you will see in the Preface that Haasts first paper had disappeared?⁵⁵ But Haast is a very good fellow in other respects – too good a great deal to spoil by ---- play such tricks unchallenged. He has been working hard at the Amuri for me & has made a very fine collection of Saurian Remains & associated fossils. It is very queer except a small species of Belemnite & a large Trigonea (found also in Tertiary strata) and Inoceramus – all the shells have a very tertiary cut. Something very interesting to General Geol. Science will come out of it.

I have to hurry since I came from Auckland rearranging the N.Z. Collections & throwing out duplicates. The fossils occupy 160 feet of floor cases 4 ft. wide. The Catalogue is in the printers hands & the Illustrated Catalogue is advanced. By this mail you get Vol. II of our Trans. It was too late for the Frisco mail.

With regards to Willy

Yrs. affectionately

J Hector.

Shall I communicate with Colenso?⁵⁶ I dont think you would get him in if the Parsons or Missionary Societies have any power or influence. I will write at length next mail[?].

⁵⁵ "Dr. Julian Haast's valuable paper on the Geology of New Zealand having disappeared, it has been thought better to avoid giving an abstract on so important a subject, in the absence of the original document, unless such could be obtained direct from another source." *Transactions and Proceedings of the Royal Society of Victoria*, Vol. 6, 1861-1864, p. vi.

⁵⁶ Hooker to Hector, 27 January 1870, "I am bothered with Colenso ... he wants me to get him made F.R.S. which I have no power to do. Of course I should be most happy to forward his views in this matter provided that we could make out a case, but I do not think that his claims are strong enough. There is another awkwardness, he should be well backed by the Fellows already in the Colony, yourself & Haast & indeed as in Gunn's case, the recommendation would best come from N.Z. now that two distinguished F's.R.S. reside there."

88: Hector to Hooker, 2-6-1870

Kew DC 174, 574-576

ATL Micro-MS-Coll-10-17, 41-48

[Wellington?]

2nd June 1870

My dear Hooker,

I hope Willy is with you by this time. He is sure to have told you much of his hero Capt. Fairchild whose kindness to Willy you do not in the least overestimate. I will give him your letter which you enclosed, on his arrival here tomorrow from the North. I think the best thing will be to send him a Field Glass of some peculiar make – say one mounted with aluminium & put an inscription on it. He would be very proud of a thing of that sort. The cheque you enclosed is not required as I had already settled sums[?] by drawing on your banker as you directed me to do.

I enclose two letters that came for Willy from you. As they came by Suez & go home by San Francisco they will have been round the globe when he gets them.

I am busy at my Catalogue. Haast has done some capital work for me in the South. He is all the better of the touch of the Curb. Dont mistake what I say – I value & appreciate him fully, only against his weaknesses one has to be en garde.

I am getting on with the Bot. Garden and will lay your hints to heart. My notion is to keep & preserve the N.Z. Plants & Trees pro----. In a short time one will have to go 50 miles to see Native bush unless we do. Our session begins on the 25th. Mantell gives the address as President – so we may expect something good. Govt. want me to take to teaching science – both by lectures & by classes – especially for Chemistry. They seem to think it is no trouble at all to do that kind of thing & would like me to undertake the work of the whole staff at Jermyn street & do my other work besides. If they will pay extra I will try – but this I fear they dont intend to do.

I have just read Lauder Lindsays excrete on N.Z. Botany.⁵⁷ I dont think I ever came across such a production. 3 months residence in one part of a country seems to give him a claim to bag all the work that is done by everyone else in every other part & in all time future. Such a list of works he promises on every possible subject that can be investigated. Why dont he say what he can & have done & clear the way for others. Mantell, Travers & Buchanan are all very angry as --- bumptious chaps like Lindsay occupying the whole width of the road frightens all our budding naturalists out of the field.

I have just had a Telegraphic correspondence to day with the Interior on the subject of Tongoriro which seems to have broken into active Erruption during the last few days. Since the formation of the Colony there has been no actual outflow of lava, but occasional showers of scoria. As far as I can learn this time however it is a true Erruption as they say the Mt. from a distance of 40 miles glows like a red hot coal. I was up there in Decr. last & all was quiet, but a few weeks after my visit Ruapehu which is an extinct and weather worn Trachyte

⁵⁷ Lauder Lindsay, *Contribution To New Zealand Botany*, 1868.

Cone was denuded of snow on one side in a remarkable manner apparently owing to a shower of hot ashes. These I fancy must have blown over from Tongoriro which is 10 miles distant.



A. Hot Springs on Tongoriro proper 5000 ft. above sea level!!

B. Ngauruhoe – The occasionally active cone of Tongoriro.

C. Ruapehu the old Trachyte Mt. The view represents about 27 miles by the trail[?] perhaps 15 in actual distance. It was from a vally under the letter C. that the glacier broke away in 1862 and forced its way down the vally of the Wangehu a small muddy stream for 56 miles to the sea. The mass of ice sweeping bridges &c. before it & scattering huge blocks of rock over a plain of soft Tertiary clay marl. This very temporary Glacial period among other things destroyed Kumera gardens. The Ice actually drifted out of the river & was cast up on the beach. I send a small packet of the Windworn stone. I will get some better ones for you in time.

Yours affectionately
James Hector.

89: Hector to Hooker, 2-7-1870

Kew DC 174, 579

ATL Micro-MS-Coll-10-17, 55-57

[Wellington?]

2nd July 1870

My dear Hooker,

I have received the last bag of seeds in good order and have distributed them as usual to the different societies. They are highly appreciated. Thanks for putting our little doings in *Nature*. I enclose a short notice of our last meeting at which some interesting --- views were raised. I am inclined to doubt Buller's rat being the real Native rat.⁵⁸ If it it [sic] is this it looks very like some of those tropical rats. The paper & figures of the rat will be published at length.

I have seen most of the numbers of *Nature* & have just read Huxley's splendid address to the Geological. I wish I could see the paper he read to the Zoological Soc. in which he

⁵⁸ See *The Transactions of the New Zealand Institute*, Vol. III, 1870, Article I, 'On the New Zealand Rat', & the Wellington Independent, 14 May 1870, p. 4: "The rat in question has for many years past been supposed to be extinct, but was immediately recognised by many natives when shown to them. At one time it was the only animal the natives had for food ... The rat in appearance is totally different from the rat which, at the present time, infests New Zealand. The skin is a beautiful glossy black fur, almost like silk, with small broad pointed ears, and it lived almost entirely on vegetable matter."

describes the Zealandie province. As soon as the extra work connected with the session is over I must set to work with the Saurian remains of which I have now large collections. The first specimens ever found were sent to Huxley by Mantell in 1860. I will have casts made of all that I have got.

I sent your letter on to Fairchild. Tell Willy that [he] has got a splendid new steamer – the *Luna* that goes 16 knots. The *Sturt* was sold for £1,200 the other day. The new boat cost £10,000. You will be startled by the financial statement we got the other night which will be seen to attract notice at home.

Yours affectionately
James Hector.

90: Hector to Hooker, 3-8-1870

Kew DC 174, 580-588

ATL Micro-MS-Coll-10-17, 58-66

Colonial Museum, Wellington
3rd August 1870

My dear Hooker,

I was very glad by your last note to hear that Willy had arrived & that you are pleased with the improvement in his health. Fairchild was with me when I received the news and sends very kind thoughts to Willy. His opinion is that Willy will do no good at home & will get on best when he gets most knocking about & least consideration. He has lots of good stuff in him but he seems to go into deep sleep as far as his energies are concerned and requires good rough usage to keep him awake.

We are all very busy as usual during the session of the Parliament. The Govt. is going in for tremendous loans for public works – millions. I don't like the look of the future for the Colony at all. I don't mean that the resources are not capable of enormous development, but the men who are in Govt. have not the intelligence or integrity to apply the money properly. It will just be squandered as all the borrowed money (now 7,500,000 £) has been previously & no solid works to show for it.

I have posted a paper to you which gives the Govt. view & makes the most of their case. It also contains the Govns. address to the Institute at length. You will notice also that I have been talking Darwinism & the paper makes me speak nonsense.⁵⁹ However even as modified, my views seem to be too strong for some of them so I am going on with this next Saturday Evening. The parsons & old folks here of course mostly came out before the great change in the public mind had been wrought.

⁵⁹ Hector is possibly referring to the notice of his lecture in the *Wellington Independent*, 2 August 1870, p. 4, in which the editor apologises “that our space limits us to little more than a mere reference to what was a very full lecture.”

Tongoriro was active up to the beginning of last week. I enclose a report of the meetings of our Society to you this time instead of direct to Nature as I also send some sketches of Tongoriro which if you think it worth while you might send to the Illustrated London News together with the extract from the Proceedings which relates to the Erruption.

I mean to start up there as soon as the weather will permit – at present the district is all under snow. I have called attention to the coincidence of the Aurora in both hemispheres on April 5th.

I cant help thinking that we will find yet that many phenomena that are looked on as local will be found as our observations are extended to be general. Could you not get them to put a Column in Nature showing the Phenomena like Earthquakes, Auroras, tornados &c. experienced in all parts of the world somewhat in the form of an Almanac.

Thus say for example

April 5. Electric disturbances & Aurora

Europe 5 to 14 hours

America ?

Australia sub tropical 5 to 9

Australia temperate all night

N.Z. all night

& so on.

At present one has to rummage all our different newspapers & then the chances are that the phenomena is mentioned without a date. All observations would furnish their month by abstracts & it might be a duty of the sub Editor to keep his eye on all foreign newspapers for mention of such phenomena. I think it would be most useful. As we will soon have the Telegraph out here we will be able to have a capital Earthquake register. Since I got Govt. to cause the observers to report any shock they feel in this Colony the number & coincidence is very remarkable. As soon as I get enough results I will publish them. I feel a great want of a good table seismometer. It must be cheap enough to distribute to all the Telegraph stations.

Not long ago one operator asked another 200 miles distant – “did you feel that”? & got the answer – no what – yes there it is.

I send you some papers on ----culture which may interest some folks at home. The results of the experiments in California are very encouraging.

I have nearly got my Museum Catalogue through the press (over 200 p.p.). I will have to reprint all the “Fishes” again as I see all the names are changed in Günter’s Book.

With kind regards to Willy & Mrs. Hooker.

Your affectionate friend

James Hector.

91: Hector to Hooker, 3-9-1870

Kew DC 174, 589

ATL Micro-MS-Coll-10-17, 67-69

[Wellington?]
3rd September 1870

My dear Hooker,

Since I last wrote the Case of Plants via Auckland has arrived in fair order only a few being dead.

I have put them out to nurse with Ludlam & Mantell till our garden is further advanced.

Travers has asked me to send you some splendid Photograms he has taken for me of the N. Z. vegetation.

I enclose a copy of a first attempt at a Catalogue of the Museum.⁶⁰ Though very imperfect it has cost a deal of work.

We are still going on with our Saturday evening meetings & there has been a great talk in the Assembly about higher Education this year & an Act passed establishing a University in Dunedin. There are to be 4 Professors 3 for Theology, Classics & Metaphysics & one poor devil to teach all sciences including Mathematics & yet they talk of granting Medical degrees!!

Folks in N.Z. are quite cranky just now & are rushing in the most inflated notions of the future of the Colony.

Haast is busy with his new Museum which is a very grand affair I hear.

I am sending large exchanges to America by this mail. I hope I will get something back. Kirk has been down here gleaning for the last three weeks & takes back eleven large cases of specimens. He has detected what he fancies to be many new plants in the herbarium, but he is a great hair splitter.

Yours affectionately
J Hector.

⁶⁰ *Catalogue of the Colonial Museum, Wellington, New Zealand*, 235pp & plan, Wellington, 1870.

92: Hector to Hooker, 1-10-1870

Kew DC 174, 590-591

ATL Micro-MS-Coll-10-17, 70-72

[Wellington?]
1st October 1870

My dear Hooker,

I was very glad to get such a good account of Willy by your last note. We feel a deep interest in his future career & I have great faith in him myself.

I got the Students Flora & had quite a treat dipping into the old familiar names – but between the American plants & the N.Z. ones I have forgotten all the small share of English botany I ever knew. I wonder if it would be possible to get a set of British Plants for our Museum Herbarium?

I have not made up your case yet, but will before the *Halcyon* leaves next month.

I have some fine plant of the Te tawhiti for you (Eatable *Cordyline*) also ferns & *Veronicas* (alpines). I am pushing on our gardens rapidly. I go up there every day after 4. I have a good steady man as resident & do all path cutting fencing &c. by contract. I have over a mile of tracks already cut winding about in gullies among tree ferns &c. that produce a splendid effect. I am going to name all the Natives & add to their number from other parts of the Colony & thus get at once & at small expense a really useful Botanic Garden that wont be equalled by any in the Colony. It is a great catch to receive gullies containing such fine Native[?] bush so near the town. We cant do much planting as our funds are small. Fancy a vote of £300 to lay out & maintain 43 acres for a year! However I find it best to begin small. I have now established Museum, Observatory, Laboratory & Botanic Garden & they will soon grow in favour. I want now to turn it all to some account as machinery for Education but the local Jealousies that have to be overcome are fearful.

Petty jealousy has already torn the University scheme at Dunedin to bits. It was to have been made Colonial but they object to the council nominated by the Governor because it has not a majority of Otago men. Very shortsighted as the wider they made the points of support the more endowments they would get.

The notice of our Institute in *Nature* was very kind & has done much good of course with the unknown[?] war news hanging over us we are all in a mess politically & socially at present.⁶¹ I enclose a *Pittosporum* which I wish you to compare & search out your Handbook name for. I also send you drawings of *Veronica hectorii* from my garden to show what it comes to. It gets Quadrate instead of round & at last the young stems come up with bushy leaves.

Buchanan asks me to enclose two compositae to you that neither he nor Kirk know. It grows on a small Island in Wellington Harbour & have only of late years appeared on the mainland at the mouth of the hut river. If they are introduced plants how did this first appear on the little Island on which no one ever lands? But its only appearing this last year on the

⁶¹ 'The New Zealand Institute', *Nature*, 30 June 1870, pp. 160-161.

beach seems to mark it as a new comer. I have not seen it myself but Buchanan says one of them is a most remarkable plant & of large size.

Ever Your affectionate friend
James Hector.

93: Hector to Hooker, 29-10-1870

Kew DC174, 592-593

ATL Micro-MS-Coll-10-17, 72-77

Patea, Prov. of Taranaki
29th October 1870

My dear Hooker,

I am out for a trip and find that I will not get back before the mail leaves so write a few lines by a chance for Wellington. I am right in the heart of where all the hard fighting was two years ago. I landed here in 1868 & could not go a mile back. Now not a Maori is to be seen anywhere. Farms are springing up & there is quite a little village here where there was only a redoubt. This place is 40 miles South of Mt. Egmont which is rising out of the bush like a great Cone of Snow. It is by far the finest district in N.Z. so there is no wonder the Natives fought so hard for it. The land runs in rolling plains from the sea the bush being about 6 miles back. It is like the finest parts of the South of England. The soil is a free loam on the top of clay marls. Naturally it is covd. with Tutu Flax & Toetoe & high fern but is rapidly passing of its own accord into a dense sward of clover & English grass. I have often heard of the district but have never had a chance of going through it before. It is a pity to see such land lying unused as it would absorb thousands of population. I dont often get enthusiastic but I could not help it today. I am glad to hear your good opinion of Kirk. I like him very much, though he is a bit of a hair splitter. I have written to ask if he will go with me on a trip to Ruapehu when the proper season comes which is Febry. I have been there twice but both times too early to do any good either for plants or for Geology. I fancy the alpine botany of the central volcanic Mts. must be very interesting. I have now made out that they have been raised out of a Pliocene Sea. All round them bare Pliocene beds dip away from 2,700 ft. none of which contain any volcanic matter. Ruapehu is now 9,700 ft and an old weather worn cone with perpetual snow cap & glaciers. Tongoriro is 6,800 ft & an active volcano. The only land that might possibly have been above water near to there when the elevation commenced is in low Slate range 5,000 alt. with a plateau top & no proper alpine Flora. On the other hand there is no trace of such Pliocene beds in the interior of the South Island & even they must have been extensive Islands in the Miocene Sea. At any rate[?] in[?] Pliocene & Pleistocene time there were lofty ranges that spread out to the East & had a Glacier cap that covered a large area. Round the Edges of this no doubt the Alpine Flora flourished just as it does round the present Ice cap at a higher elevation to which it has crept as the snow line retired upwards keeping pace with the sinking of the land. I will be very curious therefore to compare the two alpine floras & trace their derivation & I am sure that Kirk will do it well. Tongoriro is[?] quiet at present as I get a distant view of it from where I am at present. All last winter it was seen more or less active from this point, throwing up a

large pillar of ashes or smoke as they describe[?] it every 10 minutes or so & with a horrid glare all night.

I saw Fairchild the other day. He seemed quite delighted with a letter he had got from Willy. I will try to fix a ---- of the trunk of a Fern Tree with small ferns on it as you suggest in the box that goes by the *Halcyone* next month. Travers is down at his run just now and has promised to bring a lot of Alpines to send to you.

I have not your last letter beside me so may miss answering some of it. I fear you will not be able to read this as I have no more ink than will do for the adress & have to write in pencil. Mrs. Hector was much delighted with the beautiful book of Photographs you sent to her. It is a capital Photo. of you. Old Sir. Roderick looks just as hale as ever he did. It was a great pleasure to me to study you all with a lens.

Your affectionate friend
J Hector.

94: Hector to Hooker, 3-12-1870

Kew DC174, 594

ATL Micro-MS-Coll-10-17, 78-80

Wellington
3rd December 1870

My dear Hooker,

By this mail I send you an early copy of a Geol. sketch of these Islands. I mean to publish it with a few pages of descriptive letter pieces which you will get by next mail. It has been a hard job to get such work done in this place. I wish I had sent it home in MSS.

For the last 2 months I have been away from home a great deal but without much opportunity of collecting. I have your box full of plants & ready to mail next month by the *Halcyone*. I have put in all the rare *Veronicas* & also the unnamed *Cordylines* (Te tawhiti) but by next mail you will get a complete list. I wont forget to put in the top of the case a fern tree stem covd. with small things.

I have got our Bot. Garden well in hand now – over 2 miles of walks have been cut & seeds planted. So much for the public but I have also a good nursery & stocking[?] pots in progress so as to facilitate raising from seeds & also preparing plants for distribution.

I have just had time to glance at the very interesting number of *Nature* containing the Brit. Association Reports. What a wonderful fellow Huxley is.

The War seems to absorb all interest just now – very naturally too as from this distance we cant see how England is to keep out of it sooner or later.

What distinction of Natural science collections there will be in Paris. The French seem to be a nation of ----- at present.

I saw Fairchild t'other day. He is greatly delighted with Willy's Gift.

With kind regards to Willy & you all,
Your affectionate friend
James Hector

Dr. Hooker.

95: Hector to Hooker, 2-1-1871

Kew DC174, 595-597

ATL Micro-MS-Coll-10-17, 81-89

Wellington
2nd January 1871

My dear Hooker,

I have had to bother you with a heavy official dispatch this mail – which I hope explains itself, but I may say shortly what is wanted of you.

Lots of people here have great faith in N.Z. Flax & their knowledge is not always in proportion. They go on stupid methods of working it and as they have not patience to observe or to read what is said by those who do observe out here for them, they want an authoritative statement. If you know of any young fellow well up in morphology & to whom a £30 or even £50 would be an object set him to go into the whole matter - & let him begin with the driest job of all – reading the mass of printed stuff I now send. From it he will learn what is wanted. I must say at the same time that I think there is a good deal still to be reduced from foundations to practical form about the vegetable fibres.

My only fear is that you will not be able to spare any ----- to be experimented with. But Mantell says there is plenty growing at Falmouth if you have none.

What do you think would be the effect of offering a good big 1st or 2nd prize for Experimental researchers into the subject of fibres, to be competed for by Graduates B.Sc. in in [sic] London University.

Mr. Vogel the Col. Treasurer goes home by this mail & I have given him a note to you so that he may speak to you about this.

I feel quite ashamed to give you so much trouble when you are so busy but I don't know to whom else to apply.

The plant with the long seed vessel which Buchanan made me send you as a new colonist some time ago has flowered & turns out to be a *Glaucium luteum*. It is still curious how it appeared so suddenly on a little Island in the Harbour & from there has spread rapidly within 2 years.

Many thanks for getting the Tongoriro sketches into *Nature*.⁶² They are very well done. I see there has been another well marked coincidence of Aurora Borealis & Australis on the 24 & 25 Oct. when we had a very fine display. On the 24th Lyttleton was nearly totally burnt down & the papers here would have it that the blood red Aurora was the reflection of the fire in the sky. It is rather amusing to find that in England people were staring at the opposite pole of the same display & thinking it the burning of Paris. Has the fact of this coincidence ever been observed before? We used always to fancy that the Aurora was a Winter Phenomenon – but here it is most frequent in Summer – i.e. your winter. We had a fair one on the 29th ---- but really this last year has been most remarkable for them – in fact almost monthly displays – while in all the previous years I have been in N.Z. I have only seen it about three times.

Last night, Jan. 1st at 8.30 pm we had a splendid meteor, that quite outshone the Moon which was bright at the time. I[t] moved slowly to the South with a tail like a comets in shape & as long as the “Southern Cross”. It increased in size (apparently) as it passed West of Wellington & burst into sparks in the South. 3 minutes after the burst up two loud reports were heard, the second being the Echo of the first. This would make it about 36 miles distant so we will hear more of it yet probably.

A few moments after midnight when the new year came in we had one of the smartest Earthquakes we have had for a long time, so that new year is coming with plenty of fuss.

I enclose the receipt for a case of plants which I sent to you by the *Halcione*, sailed 20 Dec. I have asked a friend who is a passenger to look after them so that I hope they will go safe.

Some are rather common things but we had to fill up with what we could get. We have been all rather overworked of late & had no time to go far to collect.

However now that I have the Botanic Garden in order a little I will have a place to collect into & to propagate *Veronicas*[?] & such like for distribution.

Dont forget to say a good word for our Botanic Garden efforts to Vogel. Impress on him the great importance of the thing. He was the only objecting Minister last year to the vote.

I have 3 miles of paths cut now – all fencing done. Most of the Native bush under brushed – i.e. cleared of rubbish. The nursery formed & water with pressure laid on to it. I have spent about £370 & --- still £300 in hand for the autumn planting. I have 5,000 young trees ready to go out. Hundreds of people go there now every Sunday & holiday. They had no idea that there was so nice a place close to town. I enclose a specimen of our labels which are placed under glass in a Zinc slip.

With all the kind thoughts of the season to Mrs. Hooker, Willy & yourself, in which Mrs. Hector joins. Ever your affectionate friend.
James Hector.

List of Plants in case enclosed. Thanks for the Students Brit. Flora, it is delightfully clear & concise.

⁶² *Nature*, 13 October 1870, p. 478.

96: Hector to Hooker, 4-2-1871

Kew DC174, 598-600

ATL Micro-MS-Coll-10-17, 90-93

Wellington
4th February 1871

My dear Hooker,

You seem to be very busy from your last note & I feel proud that you should think me worth a little notch in your time. I am very glad to hear such good accounts of Willy. I always believed he could waken up if he liked. I think I have already thanked you for getting the Tongoriro sketches into *Nature* & I see from the last number received that I have to thank you for saying a good word for the zeal of our Telegraph Department.⁶³ It so happened that the same paragraph about Canada was copied into the papers here which gave me an opportunity of saying a word of encouragement and giving them the credit which you gave to me. I have them in very good drill now & next day after an Earthquake or Meteor or anything extraordinary I get a great sheaf of Telegrams, both positive & negative as to where it was & where it was not felt or seen.

In this way in less than a week I had traced the path of the splendid meteor (F--- b--- kind) that passed over N.Z. on Jan 1st 1871. I see they have been very prevalent of late. I don't know how the observation may be relied on but they may seem to be generally reported as running E. & W. or N. & S. The former being bluish & the latter reddish. It has been frequently suggested that they are not true accidents but some form of Electric discharge. It will be curious if they have diversity of colour of two traits like the N. & S. Aurora.

I think this time I have proved the bursting to be an illusion[?] & certainly in no way connected with the noise the thing makes. I send a notice of our last meeting which you can pass on to *Nature* if you think it worth while. The folks here think a great deal of their doings being noticed. I also enclose a sketch of the Meteor which you can give to any one who collects such things.

I enclose a list of Ferns from the "species *Filicum*". Haultain & Buchanan got it up & I printed it separate from our proceedings so that members can stick it in your Handbook or cut it up for labels. I also send the remainder of our labels for the Garden Shrubs.

I am starting tomorrow with the Governor & Commodore Stirling in HMS *Clio* for a cruise on the West Coast Sounds. H.E. has taken a sudden f---- that I should go so I have to stop work & be off. I am not sorry as I have not been well of late & some comfortable & really interesting work will set me up.

You may be sure that I will look up many points that have occurred to me since I was in the Sounds in 1863 & will collect as many plants as I can. I have got the Commodore quite enthusiastic on the subject of deep soundings & dredgings & have got all the apparatus together that I can. As we get very deep water close to the shore & the shells I used to get in 100 fath. were very antique in mould we may get some really good things & -----.

⁶³ 'The Electric Telegraph and Earthquakes', *Nature*, 17 November 1870, pp. 47-48.

We will be about 3 weeks at work I hope & if there are only one or two on board who will help we should be able to get something to show.

I am afraid it will prevent my Tongoriro trip this year but from what I can learn I doubt if the Natives are quite as friendly up there as they were. I got turned back once this season already & had to tramp back over the Tararua Range. I enclose the 2nd part of our last years proceedings which is just out. I have 150 p.p. of the Trans. set up. There are some capital papers by Kirk. Only he is very much given to long lists in which the same names come over & over again.

Last year a statute was passed for the election of Honorary Members of the N.Z. Institute (of which copy enclosed). The nine required have been chosen & you are at the top of the list. 4 out of 5 of the Societies having given your name as one of the three. The others are Owen, Drury, Richards, Huxley,⁶⁴ Hochstetter, Flowers, Finsch & Mueller – so you are in good company. In future years only three can be elected. By next mail I suppose you will get a formal letter on the subject. It is no great honour to you to send men who are already overwhelmed with acknowledgement of your good work, but anyhow it shows that the best men in the Colony are anxious to show their gratitude.

I don't like the look of things in the Colony. There is a reckless lot getting into power who have no stake & also fight their way by wielding enormous patronage. As the Revenue is failing this can't go on & when the collapse comes the worthy things will be the most likely to suffer first. I could not have believed it possible for such a change to come over the spirit of a Country in such a short time but the last few months have sent some folks crazy in anticipation of getting the fingering of big loans. I hope the Flax business won't put you to any bother. The thing will solve itself practically in time.

Ever Yr. affectionate friend
James Hector.

97: Hector to Hooker, 3-4-1871

Kew DC174, 601

ATL Micro-MS-Coll-10-17, 93-95

[Wellington?]
3rd April 1871

My dear Hooker,

By this mail I have sent you some early copies of papers from our Vol. III that may interest you. I am very busy with it & will soon have it out.

I also enclose a letter on the Moa which I am very anxious should appear at once – if you can get it into *Nature*.⁶⁵ If not make what use you can of it. I am anxious about it because

⁶⁴ The *Transactions of the New Zealand Institute*, Vol. III, 1870, lists Professor Louis Agassiz as Honourable Member in place of Huxley, who was not elected until 1872.

⁶⁵ Haast's paper arguing for the great antiquity of the Moa and their eradication by a pre-Maori race was read before the Philosophic Institute of Canterbury on 1 March 1871, and subsequently published in the *Transactions*

by this mail I have no doubt many copies of a recent address by Haast (one of which I also enclose) will be sent home & though in many respects an admirable address the conclusions (respecting the period to which the Moa survived) at which he arrives are so monstrous that I wish no time to be lost in contradicting them & if possible nipping in the bud all the blunders they would lead to at home, where the facts are not so familiar.

I had a very jolly trip to the South with the Governor in *HMS Clio* but we struck on a rock in Bligh Sound & that put an end to our pleasure & work. I quite expected to get a lot of good things. *Notornis* among them.

You may have seen that I lost one of my assistants by drowning in a river near the Grey.⁶⁶ What a lot of good men have met their deaths thus in N.Z. He was a first rate young fellow & a passionate pupil of Hoffmanns. He was to have taken the Chemical Lectures at the Museum this season. Now I don't know what to do.

I saw Fairchild today & told him the last news about Willy. What a strong affection he has for him. He is very proud of the Telescope.

My wife is away in Nelson just now so I am lonely.

With kind regards to Willy
Your affectionate friend
James Hector.

98: Hector to Hooker, 15-5-1871

Kew DC174, 602-603

ATL Micro-MS-Coll-10-17, 96-98

Wellington
15th May 1871

My dear Hooker,

Since last mail by which I sent you a long story about the Moa for publication, I have secured, at least for a while, the Moa's neck to which I referred. I now enclose a short note of it which please have inserted as a signal to others.⁶⁷ One of the most interesting points is the discovery that the Moa feathers were bifid like those of the Emu. This led me to examine the feathers of the Kiwi, which I was rather astonished to find were all single & not like the other ----- . It is however curious that in all the Native made Kiwi mats which I have examined the feathers (which are thinly sprinkled over the surface of a flax mat & but[?] fastened in during the process of weaving) are all ingeniously fixed in pairs. This must be a matter of

of the *New Zealand Institute*, Vol. 4, 1871, pp. 66-107. Hector's riposte, published in *Nature*, concluded that "the Moa survived to very recent times ... The fresh discovery therefore of well-preserved remains of the Moa only tends to confirm and establish these views; and it would have been unnecessary to enlarge on the subject by the publication of the foregoing notes ... but for the entirely opposite conclusions advanced by Dr. Haast in a recent address.", *Nature*, 6 July 1871, pp. 184-186.

⁶⁶ Edward Davis.

⁶⁷ 'Recent Moa Remains in New Zealand,' *Nature*, 20 July 1871, p. 228.

some difficulty & at first I thought that the feathers must really be bifid, till I carefully detached some of them. Can it be that the Natives used to make mats of Moa feathers & that this is an attempt to imitate the appearance of the real Moa mat?

I was very glad to receive the copy of your letter to Morrison & to find that you had been able to make arrangements for getting Reports – Botanical & Chemical about the Flax. It is a matter of vital importance to many in this Colony who have embarked all they had & most frequently without any knowledge or experience to guide them.

I enclose a memo. of the most important aspects of the question at present.

By this mail I send your copy of Vol. III for you are now an Honorary Member of the N.Z. Institute & will receive your diploma also by this mail. You were at the top of the poll in three of the affiliated societies. Huxley was odd-man-out – but this is of course a secret.

Our gardens are getting on well & I am planting about 1000 trees (*Pinus auricarias* & *Cyprus*) this season & bearing in mind what you advised about keeping them in bold clumps. Are you quite sure about “grassing up” Rhododendrons? I have put out 150 in one Gully alone & 100 seedling Camelias in another!! I have still about £200 of the Funds in hand & the place is now attracting the public. It is really a splendid place & has great capabilities for being made attractive & instructive at very small expense. I have a Case filling for you – or rather it is nearly full. It contains Alpines (among them *Pittosporum patulum*) some of the young trees that are not usually to be got, another batch of young Nikous & some fern covered stumps being in the roof. It is a very fine case that arrived not long ago with a capital lot of plants. We will be grateful if you can send it back again with some Piceas. Those you sent last are all flowering in permanent positions. Mantell's little boy planted out the Picea nordmaniana & my minute son planted the Auricaria excelsa. It is astonishing how things grow here. Some *Cupressus macrocarpa* that I put in as seedlings in 1866 are now 18 feet high and cover a diameter of 12 ft. A seedling you gave Mantell about 11 years ago is now more than 30 ft. high with a trunk 6 ft. round & the foliage overspreading[?] at least 30 ft. in diameter. If the settlers will only replace the forest they have so wantonly destroyed with good Coniferae this will be a great country yet. It is very absurd to hear of Winds & drought talked of as two inseparable drawbacks to a country like this when planting for shelter & directing streams for irrigation is the simplest thing that can be done.

We have just started an acclimatization society & propose that they shall have a few acres of the Bot. Gardens fenced in for rearing birds & fishes. If you know of any recent works on this subject I would be glad if you could tell Stanford to send them out to me.

I saw Fairchild the other day with a great box of Greenstone from Milford Sound for you. I don't know how he was to send it home – but very likely in H.M.S. *Virago*.

He always asks very kindly for Willy – is as proud as punch with his glass. He has a splendid boat now *Luna* that he takes about the Govnr. & all the bigwigs in. I see he has Sir. George Grey on board just now. I have never seen him since he returned to the Colony.

With kind regards to Mrs. Hooker & Willy,
Ever Your affectionate friend
James Hector.

99: Hector to Hooker, 6-6[?]-1871

Kew DC174, 609

ATL Micro-MS-Coll-10-17, 104-105

Wellington
6th July[?] 1871

My dear Hooker,

The bearer of this note is my friend Mr. W. L. Buller F.L.S. who is bringing out a book on N.Z. Birds and visits England for the purpose of seeing the Museums of the Old Country.

You will find him full of information about New Zealand where he was born & had lived all his life. He has a commission from Government to procure any thing in the way of collections for the Colony which he can & perhaps you may be able to assist him in this respect.

Yours Sincerely
James Hector.

100: Hector to Hooker, 7-7-1871

Kew DC174, 604-606

ATL Micro-MS-Coll-10-17, 98-101

Wellington N.Z.
7th July 1871

My dear Hooker,

I hope you have enjoyed your trip to Morocco and shaken off your Rheumatism. I suppose you are having it in consequence of your early hard & rough work round the South Pole. It is one of the penalties of a temporary reversion to the habits of a savage state as camping out certainly is. I have felt one or two sharp warnings & have begun to be careful about where I sleep in the bush.

I am very much obliged to Mrs. Hooker for her kindness in replying to my letter during your absence. The arrangement you have made about the flax is excellent and the report whatever it is will be received with upmost confidence. I am getting the material together for a Flax Exhibition next month during the sitting of Parliament and I will try to select a good series of specimens for your Kew Museum when it is over. I am very sorry to hear of the bad luck that we have had with our last Case of plants. The *Veronica* cuttings were not established, but mere cuttings. I thought they would be sure to succeed as they strike so very firmly out here. In fact it is almost impossible to kill them. They have a way of looking very dead before they begin to break afresh, so I hope you gave the best of them a chance. I find on enquiry that instructions were given by several person who sent Cases by the same ship to open the cases & water the plants on the voyage. If this was done it will

quite account for the mishap. However I found that the *England* was just sailing the other day when I came back from the South so I at once got a Case packed, this time with well established Alpines mostly in pots. Between the pots a few plants are pl----- with good ---- to fill up and the plans you suggested of hanging the interior with orchids & ferns on tree stems had been followed. I hope they will reach you this time in good order and before the season is too late. I am rather astonished at your valuing *Brachyglottis* & *Atherosperma* so much. They are very common & I have frequently sent you seeds of both. The former is one of the ----- of all shrubs. I am now better able to get you things as the Bot. Garden makes a good ----- & things can be preserved[?]. I am sitting aside some corners for establishing Natives. The planting is getting on well Ludlam devotes whole days to putting the *Auricarias*[?] in their proper positions.

At our last meeting on Saturday Buchanan added some new plants to the Flora & among the best a *Rostkovia*. He is going to give me specimens to enclose. I also send some seeds & especially those of *Melicope mantelli*, which you will find if you succeed in raising it to be a most beautiful shrub.

I am lucky in having got hold of Capt. Hutton again in the Department. Flax has proved faithless to him so he has returned to service. He is a really good man & well up in all things. It is very fortunate as I have been set to do Engineering questions in relation to where the railways should or should not go under this new scheme. I suppose Vogel looked you up when he was in London.

With kind regards to Mrs. Hooker whom please inform that Mrs. Hector had a second son on Monday last & is doing well. I am glad to have such good accounts of Willy.

Your affectionate friend
James Hector.

I have given a [sic] Buller a note to you. He is going home on leave to see England & to bring out a book on our Birds. He is a very good sample of a Colonial reared youth & is quite self taught in science having never been out of New Zealand or had any of the ordinary advantages. Though young he has been employed for 10 years by Govt. in most responsible situations & is at present Resident Magistrate in a very important district. If you can introduce him to any of the Societies he will take it very kindly. He is an F.L.S., F.G.S., F.R.G.S. also a C.M.Z.S. His chief fault is a little overconfidence which is hardly to be wondered at for he is equal to 20 of the ordinary men out here for capacity.

J.H.

He knows, Newton[?], Sclatter[?] & others by correspondence. Govt. have comiss. him to collect for our Museum.

101: Hector to Hooker, 6-8-1871
Kew DC174, 610
ATL Micro-MS-Coll-10-17, 105-107

Wellington
6th August 1871

My dear Hooker,

I suppose by the time this gets to England you will have returned laden with the spoils of Africs hill tops.

From the letters I have seen in the papers it must have been a pleasant trip. It makes me wish to travel again. For curiously enough I have ceased to feel as if I was traveling even when I am exploring the roughest parts of this country. I know so well what I will be sure to see beforehand that it comes just like routine work.

I hope the case we sent a month since & of which I have already advised you will reach in better order than the last.

Govt. here are going to encourage planting on a large scale & have sent up £200 to assist an Expedition for the collection of Californian Pine seeds in quantity this Autumn.

What do you think should do best on the Canterbury Plains – light gravel soil, strong winds, 28 inches Rainfall. Govt. are offering acre free for every acre planted with useful timber. What do you think of the plan?

I only write these few lines to welcome you if returned & to make a claim to hear from you. I have nothing interesting at this season.

Mrs. Hector I am sorry to say has been ill since the arrival of No. 2 & is still in bed. Fairchild was here t'other day & asked for Willy.

Your affectionate friend
James Hector.

102: Hector to Hooker, 1-10-1871
Kew DC174, 611-612
ATL Micro-MS-Coll-10-17, 108-110

Wellington, N.Z.
1st October 1871

My dear Hooker,

I am glad to infer from your appeal for “headings” to the pages of our Vol. of Transactions that you think it worth exploring for information. It is a stupid oversight & will not occur again.

I send you some Reports in a separate envelope, also as much of the Flax Report as I have been able to get from the Printers in time for the mail. I have also sent copies to Church & McNab. Have you any opinion on the question of how the Ultimate fibres of adhere together in the grass plant with such strength? This question lies at the bottom of the whole business of preparing marketable fibre. Hutton says there is a cement that is a distinct principle in the plant from the t---- & ordinary grasses & resinous matter. I cant find any characters by which to distinguish such a separate principle. It is ----- that the strength of the Ultimate fibre has nothing to do with the question. Then the Ultimate fibres in Manilla are shorter than in Phorium but in Manilla are bound together in continuous woody bundles by some-thing that is not readily acted on by water. If this cement is only the dried juices of the plant, why do they dry so hard & what could we do to fibres of the Phorium to make them dry as hard?

Look particularly at Skey's paper (p. 92) describing the curious colouration of oxidised fibre with alkalis.⁶⁸ Has this ever been noticed before or used as a means of d----- fibres? Your remarks about the non-enduring nature of Scientific popularity in the Colony were a prophesy as there was a row about the Institute in the House the other night. However it all ended right for us but it displayed a most dangerous state of ignorance on the part of this new Parliament.

I send you a Bot. Garden Report. The *Halcyon* takes a box for you. I hope you get your list. Our Rhododendron Gully planted out in March is now in full bloom.

Ever Yours affectionately
James Hector.

103: Hector to Hooker, 26-11-1871

Kew DC174, 607-608

ATL Micro-MS-Coll-10-17, 102-104

Wellington
26th November 1871

My dear Hooker,

By last mail I got a very short note from you enclosing remarks on Buchanans new plants, but from which I cant make out if you pass them as good species.

By the *Halcione* I am going to send you the Type specimen plants of the *Phormium* varieties marked in the enclosed list, also a box of woods & ferns. If you could send me a list of the N.Z. woods you have in your museum of Timbers, which I hear is magnificent, I will endeavour to complete the collection. Let me know the size & shape you prefer.

⁶⁸ 'Report of the Commissioners Appointed to enquire into the Preparation of the Phormium Fibre or New Zealand Flax', Appendix to the Journals of the House of Representatives, 1871 Session I, G-04, pp. 92-93.

I have got the vote for our Gardens again this year & mean to spend much of it in raising California trees for distribution. I have just received a large quantity of this seasons seed direct from the Trees, the Govt. having placed £200 at my disposal to assist one of the collecting expeditions that are sent out from Frisco. The seeds are in splendid order. The people here are now fully awake to the necessity for planting on a large scale. I find that in sod pots covered with Calico the seeds come up rapidly & in six months can be pricked out in small pots. I have now plants of *C. musicarpa*⁶⁹ &c. from seed sown in Oct. last (1870) that are 9[?] inches high & very sturdy. In this state after they have made roots they will be ready to plant out in Autumn (i.e. March) which we find is far better than Spring. The young trees 20 to 30 months old, which we planted out in March last have gained a whole years growth on those put out in Augt. & Sept. as they came away at once in the Spring while the others dont look as if they were going to make a start till next spring. But I dare say you know all about this much better than I do.

We are going in for no end of Railways here far beyond our means or requirements. It seems to me as if the R.W. are to be made in order to spend borrowed money. The end of it cannot fail to be grief & the break up of a fine colony. Unless with great increase of population there is nothing in the country to pay the interest on the great Loans (some £12,000,000) & the high taxation already will frighten away emigrants. It is a dodge to get a temporary blaze up during which the knowing ones will sell out.

I dont like the outlook for myself as when the mess comes seriously Education & all such branches of expenditure will be the first to feel it & the salaries of those who are doing all this the last.

Yours Ever,
James Hector.

104: Hector to Hooker, 19-2-1872

Kew DC174, 613-614, 616

ATL Micro-MS-Coll-10-17, 111-116, 120-121

Wellington
19th February 1872

My dear Hooker,

I have a long letter to thank you for and also a packet of seeds & a copy of your account of the Atlas, which is very interesting.

Ayrton must not only be a beast but blind to his duty to the Public service if he acts so as to lead you to expend your protoplasm in feeding the red tape worms.⁷⁰

⁶⁹ Out-dated synonym of *Parmentiera aculeata*.

⁷⁰ Between 1870-1872 the liberal politician Acton Smee Ayrton conducted a fierce but unsuccessful campaign to strip Kew of its costly scientific functions and reduce it to a public park. Hooker to Hector, 14 December 1871, "I am in awful hotwater & what the end of it will be I know not. The present H.M. First Comm of Works, Mr Ayrton, whom every one well knows has treated me as Director of Kew ever since he came into office ... My official accusations against Mr Ayrton are 1. Intriguing with my subordinates ... 2. Removing my Curator to

I hope you have found an anthelmintic for them by this time. Gladstone did not appear to like the idea of being so applied from what you say.

It is the same every where I fancy. We have a good sprinkling of the same class as your tormentor out here & they are gradually getting power. The new men in the Otago University appear to have put themselves in the hands of one of the worst – the redoubted Macandrew, who when he was arrested some years ago & at the time he was Superintendent declared his own home a prison & so defied the sheriff.

Did you see anything of the Natural History man Black. He is a Sc.D. Edin. I have not met him yet as I have been down the West Coast. He has gone round to the Sounds I see from the newspapers & will just catch the season I missed viz. Janry. to April, so that he may get some new plants perhaps.

Buchanan sticks up for his *Rostkovia* being a good specimen. I enclose a plate of the new Vol. (III) of our Trans. to let you see Buchanans first attempt at Botanical drawing on stone.

I see that the Science school that is to be in Ch.Ch. with Haast's museum as a locus is to be endowed with an estate of 100,000 acres. I wish I had an endowment as you suggest for this establishment but it is not such a sure thing in this country as you may fancy. Anything that is beyond the power of annual votes at once excites jealousy & is attacked & hindered in every way. Laws are made here with certain facility & they would – do think nothing of alienating reserves & Land endowments as the ---- leads them. The secret of these grand & apparently famous endowments in Otago for the University & in Ch.Ch. for this Science school is simply this.

The Provinces some years ago seized (by legislation of course) their respective reserves for Land sales. They then got into debt & some of them finding the interest inconvenient got the individual debts consolidated under one Colonial debt.

Since then they have got the Colony as a whole, or rather the General Govt., to undertake all Public works & to borrow largely for the same. Gen. Govt. of course will soon have to say – but this money is borrowed on the security of the Public Estates i.e. Waste Land of the Crown – so they will want to get the Land Reserve to apply to its proper purpose & the more so as if the G.G. do all the work what can the Provinces do with the Reserve except waste it. The rush is therefore on the part of the knowing ones to make large reserves so as to keep the leased runs from falling into the hands of the Govt. who would probably sell the land & settle it. A man with a tract of 100,000 acres on a nominal rent from the Province of course would much rather that it were declared an educational reserve the revenue of which is to be applied yearly under a trust. This is the whole secret of the Generosity!! The ---- will not stand I fear for those Educational Establishments do not spring from the want of the people & their comfortable endowments will be easily seized & boiled down when ever occasion requires or the interest of our sapient legislators is the other way.

other duties ... 3. Sending me verbal orders impugning my authority through subordinates ... 4. Proposing to the Trsy without my knowledge extravagant & useless expenditure ... 5. Depriving me of authority."

I am glad the Case of Plants arrived in good order. We will try another by next vessel that leaves this. We have no hot house or even green house so that any seeds (except for private distribution) only suitable for such will not do for me.

You may remember my getting some seed of the *Amelanchier canadensis* (my old friend the *Misaskitomina*) from you. About 20 plants came up & are now 2 ft. high in Mantell's garden. If we succeed in getting them established in the Gullies in N.Z. it will be a most important thing as a new & valuable source of food both for birds & men.

I had a long letter from Willy by last mail – or at least it came while I was away. He appears to be greatly improved.

I am glad you have seen Buller. He is a very good specimen of what a New Zealand born chap can do without the aid of Universities &c. & draws great credit. He is no doubt bumptious & folks out here resent that, but he is (for work) worth many of such as hold him in contempt.

Sincerely Yours,
James Hector.

105: Hector to Hooker, 9-6-1872

Kew DC174, 617-618

ATL Micro-MS-Coll-10-17, 122-124

[Wellington?]
9th June 1872

My dear Hooker,

I have just returned from a long trip in the other Island as the mail leaves. I find a long letter of 4th Ap.⁷¹ from you enclosing a B/L. for the box of seeds which we received some time since & many of which were already above ground. I am glad the Flax plants reached you although I am sorry so many failed. I have now seedlings of 14 kinds sown in Nov. 1870 that are 3 ft. high & consist of 7 to 12 fans. They are all coming up of only 3 kinds the other varieties disappearing. Till they flower however I can hardly judge of the full result of the experiment. I have the parent plants along side.

I will ship all the woods I can get in addition to those in your list by the first ship.

The Rhododendron seeds are very welcome. Ludlam is away for a 12 months trip to Sydney so that I have put them all in the gardens.

Many thanks for your kind hint about the future. I will treasure them. What do folks at home think of Buller's Birds?

⁷¹ We have been unable to locate a copy of this letter. Hobbs & Yaldwyn have Hooker's letters to Hector of 14 December 1871 followed by 17 September 1872.

I had a long & capital letter from Willy by this mail. I am very pleased to see the great improvement it shows in every respect. Please tell him I will write & congratulate him on passing his examination by next mail as I have no time now.

By this mail you will get Vol. IV of our Transactions. I have a heavy vol. of Geol. Reports next. Reports & a work on Flax in hand.

With kind regards to Mrs. Hooker
Yours ever
James Hector.

106: Hector to Hooker, 29-7-1872
Kew DC174, 615
ATL Micro-MS-Coll-10-17, 117-119

[Wellington?]
29th July 1872

My dear Hooker,

I only write a few lines to enclose a plant I got in the Patea country South of Tongoriro some years ago & which was put in a wrong packet as some other grasses. Buchanan says that after the capsule opens the seed remains attached for a length of time to a central column, forming an agglutinated ball like *Geniostoma*.

We are in the midst of Politics just now and there is a general scramble for a share of the big loans.

I don't like the look of things in the Colony. The people appear to take no real interest in what is going on but are at the mercy of schemers who are manipulating the credit of the country. However I am overworked & out of sorts & perhaps take a more gloomy forecast than I should.

The *Halcyone* is just in & when she sails again will take things for you.

In haste
Yours ever
James Hector.

107: Hector to Hooker, 26-10-1872

Kew DC174, 619

ATL Micro-MS-Coll-10-17, 125-127

[Wellington?]
26th October 1872

My dear Hooker,

I have not heard from you of late but I see that you have had your troubles of no slight degree to bother you. I can assure you that you have the sympathy of everyone out in this Colony who cares about science and who knows the vast benefits you have conferred on us by your botanical work. Travers, Mantell, Knight, Gisborne, Stafford & others with whom you have official & scientific relations are all strongly moved to express their sympathy with you in some marked way & I fancy it will be brought forward at the next Board meeting of the Institute.

I see that it is not done with yet in Parliament. I should not wonder that it may surely damage Gladstone if he shelters his mean colleague too far. However I suppose you are sick of the whole thing long ago. Out here we read every scrap about it with avidity.

I have no news botanical except that the Govt. though favourable put nothing for our gardens on the estimates but that the very men who have always opposed[?] the vote insisted on the same sum as before being put on as it had been the last spent money of the lot. There was a debate on the question of whether Wellington only should get --- & the item was carried by 33 to 19. The gardens are still in the rough state of nature & are looking very well. Some of your Kew trees have come on splendidly. Of the seeds you sent last year about 50 are up. The enclosed Report & adress will show how the Institute is getting on. We have had weekly meetings of the Soc. this session & have got through a lot of good work.

Ever your affectionate friend
James Hector.

108: Hector to Hooker, [Undated: June 1873?]

Kew DC174, 620

ATL Micro-MS-Coll-10-17, 128-130

[Wellington?]

[Undated, June 1873?]

My dear Hector,

At last I have got the seed of *Cordyline indivisa* for you. This is the first season since 1866 that I have seen it in seed. Many things have seeded this year that are not usually seen. The seed is packed in a small tin box in Charcoal & should reach you in about 50 days. By next mail I will send a second package and a case of it & also the live plants you wish to get will go by the next ship. We have had a most extraordinary season – continual East wind since January & absolute drought in all the wet districts & great floods where usually they have no rain.

By this mail you will get Vol. V of the N.Z. Trans. & several other works from the Department. I am getting all our fossil plants Photo. lithographed. There will be one plate of Enlarged views of the species & all species associated in each locality will be figured like the enclosed.

The resemblance of our Jurassic Plants to the Rajmahal fossils in India is wonderful.

I have been a good deal put out of late. My eldest boy & wife have both had Typhoid, the latter not up yet & has been in bed for 8 weeks. There have been many cases this season, Mantell lost his wife & her niece. They live next house to us. I have felt overworked & out of sorts. I have had no holiday for 10 years now for field work is not play in this country. I am glad you are through your troubles with Ayrton. I had a very nice letter from Willie who seems to like his new work.

Ever your affectionate friend
James Hector.

109: Hector to Hooker, 2-8-1873
Kew DC174, 621
ATL Micro-MS-Coll-10-17, 131-132

[Wellington?]
2nd August 1873

My dear Hooker,

Ludlam is very anxious to get some seed or young plants of the Abyssinian Banana which is said to be hardy at Paris. Can such be got?

I am getting a fair lot of ferns potted, in part for you but have had to get a glass house specially for those with the expensive money from the ---. The *hymenophyllum* are very difficult I find to preserve. I lost all that I had collected for you.

Our trees are thriving well. Though you don't seem to like the Californians, they do best with no ferns[?] covering[?] the hill sides & affording shelter from wind which is the chief end of planting in N.Z.⁷²

The value of some of our bare places is increased 10 fold by a few rows or clumps of *C. macrocarpa* – or even Blue Gums, only they get cut down by the frost. I have already written you all my news.

Sincerely Yours,
James Hector.

Receive my congratulations as Pres. R. Soc.

110: Hector to Hooker, 30-9-1873
Kew DC174, 621
ATL Micro-MS-Coll-10-17, 131-132

[Wellington?]
30th September 1873

My dear Hooker,

I was very glad to get a few lines from you by last mail. You must have your hands very full now & I don't expect to find you so regular in correspondence as you always have been. I am getting on in a crooked fashion having far too many things imposed on me to do any thoroughly which begets a most unsatisfactory state of mind. Hutton has left me to be a

⁷² Hooker to Hector, 14 December 1871, "You ask what should do well on the Canterbury Plains? Of Pines try *Abies* Douglas fir, & of trees Planes, Oak, Limes & Birches – for God's sake do not go in for those infernal ugly Eucalypts & the endless hideous Californian Pines – with which England is now getting covered to the exclusion of noble trees."

Professor at Otago so I am again single handed so far as Field & descriptive work is concerned. I have all the plates for the Fossil Flora done but halt at the descriptions. I will have to make fair use of the convenient word *Phyllitis*.

I hope you wont forget that you are to have your pick of the Timber Exhibits that I sent to Vienna. The Agent General has instructions to that effect.

I will send the case of *Veronicas* &c. by the first ship. Our gardens are making steady progress but we would be glad of some showy shrubs.

I enclose an abstract of my adress to W. P. Soc. Perhaps you may think it or parts of it worth putting in *Nature*.⁷³

With kind regards
Your affectionate friend
James Hector.

111: Hector to Hooker, 8-5-1874

Kew DC174, 623-624

ATL Micro-MS-Coll-10-17, 137-142

Wellington
8th May 1874

My dear Hooker,

I have just got your note of 10th March & am vexed at your report of the condition in which the Timber specimens reached you.⁷⁴ The duplicates are kept here all in splendid condition except some *Fagus* & others that are incorrigible warpers, so that it cannot be all put down to faulty seasoning. Every specimen was numbered & a printed list with the numbers & cases in which the specimens were packed was sent with them & to make sure – on all N.Z. specimens at least – the name was also written in pencil. I am not certain if this was done with the specimens packed after the Ch. Ch. Exhibition as there was great confusion & hurry to catch the Steamer.

However I will get you another & as complete a set as I can if you will send me a note of those you think are wanting.

If a copy of the original packing list was preserved in the Col. Secty. Office I will send you a copy of it.

Many thanks for the seeds. I have divided them with Ludlam & Mantell. I have just got a fine case of seeds from Prof. Kellog in S. Frisco. The Colonists are going in largely for

⁷³ Read before the Wellington Philosophic Society 6 August 1873, published *Transactions of the New Zealand Institute*, Vol. 6, 1873, pp. 367-376.

⁷⁴ Hooker to Hector, 10 March 1874, "The Institute Exhibits arrived last week but in an awful state, 2/3 without names, back torn off, wood cracked & split, & altogether a sorry mess."

planting here. Only fancy it has become quite a political cry "preservation & restoration of our forests"! I have been at them for years & at last they have taken alarm. I really believe that if they go on as at present converting the whole islands into grass land in 20 years N.Z. would be a sterile island. The average moisture when plotted in a curve shows a steady decline during the last 10 years in all the Forest districts, while the Temperature & Rainfall form only[?] so uniform & consistent is like



This I attested almost certainly to the burning & waste of the timber. I have hardly been at home since October & have just ret'd. from the East Cape district where the Petroleum occurs. It escapes from anticlines in Upper Mesozoic Strata when they are denuded of the Eocene Tertiary. There are only a few Natural oil wells but many gas escapes. The oil is very fine. The only source I can guess for it is in the thin Carbonaceous seams in our Lower Cretaceous unless it is derived from Saurians. The Saurians I have already found at the Amuri Bluff if they were as oily as their modern replacers the Cetacea could by natural "trying out" yield far more oil than has yet been got & doubtless there are plenty more where they came from & in other places. I think I have all the Genera that have been found in the West Missouri Cretaceous beds (U.S.A.) but they are strangely mixed with true Plesiosaurs & with shells of mixed Jurassic & Cretaceous types. Perhaps we have Darwins Cretaceo-oolite just as I believe we have a great Cretaceo-Eocene formation. Our great Coal measures lie between them.

I enclose proofs of a paper by Buchanan on the Wn. Flora.⁷⁵ Vol. VI is well advanced & will be out in a month or so. We cant print here as fast as you do in London. 5 1/2 sheets a week here is considered good progress!

I wish I could be at home while you are P.R.S. to lend my ----- and in doing you the honour you deserve.

I expect the *Challenger* will be here shortly with all the scientific folks – it will be a great treat.

We have Kirk here now. He is a very fine fellow but in bad health.

I am glad Willie is doing well. I always have enquiries about him from his old friend Capt. Fairchild. Tell him that his old companion Haultain is now Second Mate on board the *Luna*.

Ever Yours affectionately
James Hector.

⁷⁵ John Buchanan, 'Notes on the Flora of the Province of Wellington, with a List of Plants collected therein', *Transactions of the New Zealand Institute*, Vol. 6, 1873, pp. 210-235.

112: Hector to Hooker, 4-7-1874

Kew DC174, 625

ATL Micro-MS-Coll-10-17, 143-145

Colonial Museum, Wellington
4th July 1874

My dear Hooker,

I send you Vol. VI by this mail.

The *Challenger* is here just now but except the things they got in the Museum, will not carry away much from N. Zealand as they are off again to the Islands after only a few days stay.

They are doing some splendid work & it is a great pity that they cant work up this area as our suite of Tertiary strata is so complete & rich in fossils. Thomson has been going over them with great interest as he finds many of his new dredged forms represented in our Museum cases among fossils – at least so I gathered. Any way he is greatly impressed with the richness of our fossil Fauna. I was just unpacking Devonian – Trias. Fossils of which I have just got a splendid series.

Dr Berggren is here just now at at [sic] work with Buchanan. I have not had time for a chat with him having been in bed for a week with a feverish attack from a poisoned wound, & since I have been out my time has been fully occupied with the *Challenger*.

They are off tomorrow for the Islands however & I will be able to devote time to him. I want to get a grant to enable him to examine our N.Z. ranges.

Ever Yours Sincerely
James Hector.

113: Hector to Hooker, 28-8-1874

Kew DC174, 626-627

ATL Micro-MS-Coll-10-17, 146-151

[Wellington?]
28th August 1874

My dear Hooker,

I enclose slips of the Reports of our recent meetings which may perhaps suit for *Nature*. The long extract about the ergot in the Rye Grass is more adapted for your Botanical journal.

I have just received an official from the Agent General reporting your kind offers in re. Forest Tree Seeds. An Act has just been passed on the subject of Forest conservation &

also a large Parl. paper on the subject which I send to you. I will take care that your Ward Cases are returned with the choicest Natives we can procure for you.

I have been very busy during the session that is just over & all the time fighting against weakness that followed a smart fever attack that kept me in bed for 10 days about 2 months ago. I have just got a vote of £4,000 to enlarge the museum & I am thinking while the building is in progress to get a years leave & run home to see you all & to get the latest ideas & as many Type specimens as I can. I will also be able to look after our share of the new Colonial Museum in London & perhaps to pick up an assistant. Since Hutton left me to turn Professor in Otago I have no qualified help. If my plan meets approval at head quarters I will bring home a complete set of our Fossils for comparison & publication & will be able to do more real service to the Colony than if I were out here all the time.

I have just been going over our old collections together with very large gatherings made during the past year & find that all our Brown Coals must be referred to the Lower Chalk & that our chief bituminous coals are not separated from them by any Marine formation but are Fresh Water Coals while our Brown Pitch Coals are Marine. That is the direction of the evidence at present. Our great Saurian Period was that of our Brown Coals. I showed the Fossils to Wyville Thomson & he agreed that they had a very gault look. The only difficulty is the absence in some localities of proper secondary faunas (ammonites, belemnites &c.), that present in other localities with shells common to all - & the fact that the overlying Chalky beds graduate up without a break into our Lower Tertiary. I have this last year found a well marked Nummulite Limestone zone at distant points in the Islands that seems to close this older series - & will be a use to us. The difficulty I have to contend with is the detailed arrangement of the localities & the wonderful local character of the fossils just as we find in the recent shells round the coast in the present day. This diversity is not so marked however in our Upper Tertiary series. These are of enormous thickness & are wide spread. From the Neocomian down to the Devonian or Upper Silurian I have now made out a fair sequence. The chief mark is above & below a group of Marine Sandstones & Limestones that will not break up so far as I yet see & which are Trias – Up. Carboniferous.

But I dare say this does not interest you & you must be very busy.

With kind regards to Willie who I am glad to hear gets on so well in his new line.

Believe Me Ever
Yours affectionately
James Hector.

Dr. Hooker, C.B., F.R.S.

114: Hector to Hooker, 22-11-1874

Kew DC174, 628

ATL Micro-MS-Coll-10-17, 152-154

Auckland
22nd November 1874

My dear Hooker,

Just a word to say that I start in about a month for England & hope to see you & give all my news in person about April next.

As I wrote you, I have a years leave & am sending in advance large collections of all sorts for comparison, several cases of Plants for you have been shipped by the *Halcyone* but I told my clerk to advise you of them as I have been North here for the last two months. I will write fully by next mail after I return to Wellington. This is just to catch the out going mail which is on the evening starting.

I am going to take my wife to see all the wonders of the old country.

In haste
Ever Sincerely Yours
James Hector.

115: Hector to Hooker, 18-12-1874

Kew DC174, 629

ATL Micro-MS-Coll-10-17, 155

Colonial Museum, Wellington
18th December 1874

[*Written in another hand, signed by Hector*]

Sir,

I have the honour to inform you that the case of live plants forwarded by the ship *Soukar* has arrived and I am desired by the Botanic Garden Board to thank you for this donation to the gardens. I regret to say that some of the plants on the side of the box that received the least amount of light & warmth, were dead, the greater portion however were in good condition.

I have the honour to be,
Sir,
Yours most obediently
James Hector.

Dr. Hooker, C.B., F.R.S.

116: Hector to Hooker, 24-12-1874

Kew DC174, 630

ATL Micro-MS-Coll-10-17, 156

Nelson, New Zealand

24th December 1874

My dear Hooker,

I have only time to write a line to say that I will be leaving Wellington by the *Howrah* about the 1 February and therefore hope to be home in May. The seeds you last sent have all arrived and contain a few which we shall value, but many of kinds that we have in abundance. The plants by the *Soukar* have also come and on the whole are in good order, but of the lot there is only *Auricaria braziliicum* which I intend to keep for the gardens as the rest are either things we have or for a store a luxury which we dont posses. I enclose you some of the new plates for Volume VII *T.N.Z.I.*

In haste sincerely yours with all comps of season to self Mrs Hooker & Willie
James Hector.

117: Hector to Hooker, 19-1-1875

Kew DC174, 631

ATL Micro-MS-Coll-10-17, 157-159

Wellington

19th January 1875

My dear Hooker,

I was deeply grieved to hear from Willie by last mail of the sad & very sudden loss you have sustained.⁷⁶ You have the most sincere sympathy of your friends out here and we all trust that you have found strength to bear up against the shock. I only venture to intrude on you at a time when no ordinary correspondence can have much interest to say how much we feel for you and your children and to tell you that we sail for England on the 27th inst. in the Ship *Howrah* & hope to be in the old country early in May. I will have about six months at home and tho it is likely that you will have recourse to the usual tonic of a long trip somewhere or other I hope I will not fail to meet you. Why should not have a trip out here when I return. It would be a thorough change & would be full of interest & you would have a hearty welcome from many old friends.

With heartfelt condolences, believe me my dear Hooker
Ever your affectionate friend
James Hector.

⁷⁶ Frances Hooker, Joseph Hooker's wife, died in 1874.

118: Hector to Hooker, 1-6-1875
Kew DC174, 631a
ATL Micro-MS-Coll-10-17, 160-161

Great Western Hotel
1st June 1875

My dear Hooker,

I am here at last & will lose no time in visiting you at Kew – that is as soon as the ship comes in for I left it at Falmouth and came up to London by Rail with my wife. I have several cases of Plants on board, two for you, but if you like the whole can go to Kew & be looked over so that you may take any thing you want out of the others.

I expect the ship will get to the Docks to day or tomorrow.

Please send me a line of directions about the Plant Cases.

Hoping to meet you soon,
Ever your affectionate friend,
J Hector.

119: Hector to Hooker, 4-8-1875
Kew DC174, 631b
ATL Micro-MS-Coll-10-17, 161-163

5 Montague Street, Russell Square
4th August 1875

My dear Hooker,

I am at last back from the North after a pleasant trip during which I got as far North as the Brora Coal Field.

Davis at the Brit. Mus., who is to take over my fossils, is going on leave next week, so I must finish off with him at once. I think about two days more will do for that work, so I will try to be out at Kew on Saturday. Dont stay in for me as I can go into Mr. Oliver's room where the fossil plants are & go on unpacking & putting them straight so that you can look over them at [Line cut off]

Mrs. Hector is making prolonged visits by herself so I am all alone & have secured lodgings close to the Museum, where my work will mostly be till the 25th inst. when I go to Bristol.

Yours Ever
James Hector.

120: Hector to Hooker, 17-9-1875

Kew DC174, 631c

ATL Micro-MS-Coll-10-17, 164-166

Genoa

17th September 1875

My dear Hector,

I rushed thru London from Bristol without seeing you as I was anxious to save the season here for the Mts. Bristol was rather dull & I missed all the heavy guns[?].

We are having a very jolly trip & in a week more will leave sure enough of this side & will cross by the Simplon to Milan. The country is looking very green & lovely. The finest grass season ever known.

I have looked up all the Museums & am best pleased with the one here which has all P---- Fossils.

The Bonn Museum is very rich but in a mess. However they seem to be at work reorganising it. The Botanic Gardens everywhere are queer things! By the way one meets N.Z. Flax & Cabbage Trees everywhere in the most prominent places at Hotels, Public Gardens & Flower shows they are the most prominent.

I hope to be back about 7th Octr. & to be out at Kew at once after my return. The Geol. of Switzerland is very like N.Z. in some respects. Especially the distribution of the Miocene strata. I look forward with great interest to the section of the Alps.

Sincerely Yours
James Hector.

121: Hector to Hooker, 16-10-1875

Kew DC174, 631d

ATL Micro-MS-Coll-10-17, 167-168

7 Westminster Chambers

16th October 1875

My dear Hooker,

I have just returned from Paris & will be out to see you as soon as the mail is in & out again. Featherston asks me to show you the enclosed bill of mortality.

Mantell also writes me to tell you that those next the outside of the Cases were the "deadeast". I am sorry for the loss of the Piceas as they are most important for us to have.

We have had a jolly trip of 6 weeks & got as far South as Florence.

Mrs. Hector joins in sending her kind regards.
Yours Ever,
James Hector.

122: Hector to Hooker, 9-11-1875

Kew DC174, 631f

ATL Micro-MS-Coll-10-17, 174-176

70 Great Russell Street W.C.

9th November 1875

My dear Hooker,

I have to go in to Kent today to see Ed. Wilson (of the Melbourne Argus) but will be out to Kew on Friday morning about the Plants. I have been very busy this last week & among other things unpacking the collections returned from Vienna to select some for Philadelphia. I find now what became of the wood specimen labels as they have been rolled up with the rock specimens. For instance a specimen of Serpentine has come back as "Drymys axilaris" & so on!!

Berggren is with me & seems much pleased with your offer to to [sic] work at Kew. He is a real good fellow.

Do you think you could get the enclosed (or part of it) into Nature?

Ever Yours

James Hector

Dr Hooker C.B.

123: Hector to Hooker, 14-12-1875

Kew DC174, 631g

ATL Micro-MS-Coll-10-17, 177-179

6 Dorchester Gate, W.

Saturday 14th November 1875

My dear Hooker,

I have just seen Vogel & he will be glad to look after the Case of Cork Oaks at Melbourne, if it is shipped direct from here to New Zealand by the *Somerset Shire* S.S. which sails on the 20th (Tuesday week). Can your people arrange the shipping or still better to get the shipping note at the Agent Generals Office? Unfortunately this is mail week & besides I may have to go down to Wales on Tuesday night on business so that I cant offer to look after the matter. I will be back on Thursday morning so you may expect me to join you at the Phil. Club dinner. Please tell Mr. Dyer that I cant find the Fossil Plants (Plates) in any of my repositories, I fancy they must be behind the papers on the shelf above the Fossils in his upstairs room.

Ever Yours

James Hector.

124: Hector to Hooker, 18-1-1876

Kew DC174, 631h

ATL Micro-MS-Coll-10-17, 179-181

[London?]
18th January 1876

My dear Hooker,

That is truly a grand collection & I hope it will get out all right.

I have told them to send a special agent this morning to see if they are all right in a cool part of the ship & to report. I have told them to insure at the rate of £20 per Cask, but that would not cover the real loss to the Colony if any thing went wrong. I have also memo-ed the A. General on the subject of making the Govt. acknowledge properly the interest & trouble you have taken in the matter.

My wife goes out on the 10th & I am up to the eyes in work, but we will be down one of these days to see you & Miss Hooker.

Ever Sincerely Yours
James Hector.

125: Hector to Hooker, 1-2-1876

Kew DC174, 631i

ATL Micro-MS-Coll-10-17, 182-184

7 Westminster Chambers
1st February 1876

My dear Hooker,

I did not intend being at the Linnean Socty. on Thursday as I start to see my wife off to N.Z. next morning & I promised to give up the evening to a gathering of friends, but I will get away for an hour if there is any thing urgent. I am not yet admitted however, having only two days ago got notice of my election. The notice was first sent to N. Zealand, & then by afterthought a second was sent on the 13th inst. to my old lodgings in Russel Street where it has been lying since.

I have a big parcel of Plants for you. I expected them to be Alpines from Sinclairs old ground in Nelson but find only a few & the collection made up with common things. It is not fair of Kirk to have done this as I paid 6 d. a plant!!

Yours Ever
James Hector.

I send the Plants by Parcel Delivery. Can I get a sight of your report on the Haast controversy?

126: Hector to Hooker, Undated F [*Internal evidence late March 1876*]

Kew DC174, 631e

ATL Micro-MS-Coll-10-17, 169-173

7 Westminster Chambers

Monday Aft.

[*Late March 1876*]

My dear Hooker,

It is an age since I saw you but I have been very busy & have now to be off soon.

I have asked a few friends to dine with on Saturday next (1st April) at the Criterion Restaurant at 7 o'clock.

Can you spare an evening & join my party.

I am off on Thursday week & will be out to Kew one day this week.

Col. Stanford has telegraphed for me to bring some large Wood specimens from Kew to Philadelphia. I presume he means New Zealand specimens. Can you let me have any? or is it officially impossible.

How did the bundles of plants turn out that I sent. I trust you got them. I did not write but sent them by Parcel delivery just before I went to Wiltshire about a month since.

Ever Yours

[JH]

[*Another hand*]

The bundles of N.Z. plants from Dr. Hector have not been compared. I never regarded them as important ---- herb. tho' I waited to have the 1st set (there are 4 I think) composed before sending it out. What I want to know from Dr. Hector is from what region did he specially wish to have replicates Cryptog. as well as Phaenerog. and ---- ----?

D.O.

127: Hector to Hooker, 3-4-1876

Kew DC174, 632

ATL Micro-MS-Coll-10-17, 185-187

6 Porchester Gate

3rd April 1876

My dear Hooker,

Would it be possible to get a card of invitation to the R.S. Soiree for Farmer. I think he would like to go but of course I have not suggested it till I asked you.

I am off on Thursday morning. I drafted an official about the Magnetical Instruments which you will get in due course.

I will not be able to spare the time to pack the Fossil plants. There is no hurry & if you think it better to let them remain where they are till my paper comes to you no one can be agrieved. Their final destination will be the British Museum. They are very inferior to the set in the Colony & which I must again go over with the aid of the Books I have sent out before I publish. Since I have been reading these books I feel sure that the drawings miss many of the characters – such as they are. It is rather a strong step to carry back the existing types of our Flora to Cretaceous times - & requires one to be very certain.

Sincerely Yours

James Hector.

128: Hector to Hooker, Undated G [1875?]

Kew DC218, 158-159

[*London?*]

[*Undated, 1875?*]

My dear Hooker,

I will try & get out tomorrow about the plants – please leave instructions if you happen to be away during the day. I will bring out the drawings of Fossils &c. & the Plan of the Museum with me if I can get hold of them but all my things are stuck at some agent in the City. I will bring the plan on the chance of finding you with 1/2 an hour to spare as my missing letters have turned up & I have £1,000 to spend for the Museum & would be grateful for your advice.

Mrs. H. has been laid up with cold for two or three days but is better.

Sincerely Yours

James Hector

Sunday Morning.

128 A: Hector to Hooker, Undated G [1875?]

Kew DC 218, 158-159

[*Partial note filed with letter 128*]

.... yourself & I would rather see you undertake it than make a mess of it myself. Next best thing would be for me to work it out under your directions (very gentle hints would do) & humbly go in for the honourable crumbs that may fall.

After all, the greater part of the detailed work has been done by Richardson and the Idea to be worked out (of oscillations of floras in latitude) is altogether due to you and Darwin.

What remains is more like an accountants work making up a slate. The idea is beginning to dawn on me that I am making a fuss about nothing & boring you with it, but you drew it on yourself when you stirred up my vanity & ambitious features[?].

Please say yes or no to the first part of this note by return of post & believe me

Ever affectionately Yours

James Hector.

Dr. Hooker

Kew

I sent the *Times* with the Birds & Mormons in it.

129: Hector to Hooker, 20-9-1876

Kew DC174, 633

ATL Micro-MS-Coll-10-17, 188-190

Wellington
20th September 1876

My dear Hooker,

I arrived here a few days ago from Frisco. and find that Mantell has kept everything going in first rate order during my long absence.

He & Sir George Grey made fond enquiries for you & told me a bit of news which I hope is correct – but any way I will chance my sincere congratulations & kind wishes for your happiness.⁷⁷

I have not yet seen the plants you sent out – but I hear they suffered much on the voyage. The mode of packing did not – (so says Buchanan) exercise any influence – the proportion lost in all cases being about the same.

⁷⁷ After the death of his first wife in 1874, Hooker married Hyacinth Jardine in 1876.

I find they have kept your report re Sumner quite dark – so that some persons give them credit for kindly feelings as if they were sparing me from its effects. Surely you did not mean that it was not to be used for the purpose of settling the question they raised about the manner in which our publications are to be conducted. Of course as I have seen it, I know why the Ch.Ch. folks dont want it to come out, but its not fair after all the fuss they made. Mrs. Hector is well & joins in sending her kind regards.

Ever Your affectionate friend
James Hector.

130: Hector to Hooker, 19-10-1876

Kew DC174, 634

ATL Micro-MS-Coll-10-17, 191-193

Wellington
19th October 1876

My dear Hooker,

I enclose some interesting papers by Buchanan. That on the Marattia I should think worthy of the Linnaean & it would please the old man if you communicated it for him.

I am very busy with arrears of work & getting a mass of Reports ready for Press and our IXth Vol. of Trans. is also looming up very close. Yet I must be off to inspect points that have been raised during the progress of the Field Survey during my absence.

I have given Vogel a note to you. He is going home to day as Agent General to succeed Featherston. He will be very active in introducing trees &c. He has an ambition to become F.R.S. & I promised to mention it to you.

They have just cut off the vote for the Bot. Garden – only a matter of £300 but all we had to keep one of the most interesting domains in order. It was flung to the Provincial Wolves like the babies in the story. However they cant have seven years good work thrown away & must contrive some way of keeping it up. I write in haste having all the arrangements for a great conversazion tomorrow on hand. Mrs. Hector joins in kind regards.

Ever Yours Sincerely
James Hector.

131: Hector to Hooker, 14-12-1876

Kew DC174, 635-636

ATL Micro-MS-Coll-10-17, 194-197

Wellington
14th December 1876

My dear Hooker,

I have most of your Ward Cases filled up but wont send them for a month or two. I do hope you will get the plants in good order this time & will spare no trouble to ensure this. The valuable plants in the enclosed list are all thoroughly established in Pots and many of them have flowered since they were potted so that they should travel well. I am going over to the Chatham Islands & to the West Coast Sounds with the Marquis of Normanby & will get some more for you of rare kinds & will particularly attend to the Ferns & orchids on the tree fern stems.

I enclose a specimen of the lost *Senecio perdicioides* which was got by Archdeacon Williams at Tolaga Bay two years ago & has now flowered in the Garden for the first time. I will soon be able to send you more flowers & also a live plant of it.

I have far too much to do at present & grudge this trip to the Chathams tho it will be interesting. Capt. Fairchild sends his regards to Willie.

Ever Sincerely Yours
James Hector.

[*Note attached*]

My dear Hooker,

This list is sup. to the list enclosed in another letter. They fill XXIV cases in all.

J. Hector
15/12/76

132: Hector to Hooker, 8-2-1877
Kew DC174, 637
ATL Micro-MS-Coll-10-17, 198-200

[Wellington?]
8th February 1877

My dear Hooker,

I enclose you B/L for 22 Cases of Plants as per list sent last mail. Shipped by the *Howrah* which sailed on 18th Janry. for London.

The cases were all Canvas covd. & every care was taken to make them safe. Capt. Greaves & Mr. Lark 1st Officer have promised to look after them. The freight was paid here & I do hope this time it will not be in vain.

The gardens[?] here are not in good order but the trees are growing splendidly. I dont think the mortality amongst those things you sent last was nearly so great as they fancied at first. But I presume we will soon have a forest Department to look after all such matters.

I have got a B/L for a case of dried plants from you but no advice of what it contains.

I hope you have seen Ludlam.

Tell Willie that Capt. Fairchild asked very kindly for him & how he looked &c.

Ever Yours Truly
James Hector.

133: Hector to Hooker, 9-3-1877
Kew DC174, 638-640
ATL Micro-MS-Coll-10-17, 201-205

Geological Survey, N.Z., Wellington
9th March 1877

My dear Hooker,

By last mail I had several notes from you of dates from Octr. to January.⁷⁸ I have also received a box by the Ship *Adamant* containing a further gift of Books which like the former I will hand over to the Phil. Soc. on condition that they sort & bind them.

I enclose a copy of their Report which acknowledges your kind gift.

⁷⁸ We have been unable to locate copies of these letters. Hobbs & Yaldwyn have Hooker to Hector 22 September 1874 followed by 10 February 1877.

By this mail I send you a parcel of *Panax* as I think your specimens must be defective. The question of inflorescence is not important as it appears to vary in different stages, the *racemosa* form being in the flowering stage – Buchanan has made this clearer in his paper which I return to you so that you may compare it with the fresh specimens. But the confusion among local botanists & to some extent Buchanan thinks in your handbook has arisen from mistaking mature trees of *P. crassifolium* with upright serrate leaves for the other species *P. longissimum*. I understand that Kirk accepting your two species as described is describing the true *P. crassifolium* as a new species (*P. ferox*) but he has withdrawn his paper again for the present.

I will not forget your request for seed of *Cordyline indivisa* – but it is hard to get.

You will observe that we have lost Sir David Monro who besides being a leading politician was a capital botanist as his Essay in our first Vol. Tr. N.Z.I. shows.⁷⁹ He was a great friend & companion of Dr. Sinclair.

Ever Sincerely Yours
James Hector.

[Attached note, tidy hand, signed by Hector.]

New Zealand Institute
Colonial Museum, Wellington
9th March 1877

Sir,

I am directed by the Governors of the New Zealand Institute to inform you that they have received the specimens mentioned on the other side which you have been pleased to present to the Colonial Museum and I have to return you their best thanks for the same.

I have the honour to be
Sir
Your most obedient Servant
James Hector
Curator.

The Director
Royal Gardens
Kew
London.

[Handwritten]

1. Collection of Mosses &c. India

2. Collection of European flowering plants. Placed in box of Books for Col. Museum Wellington N.Z. by Prof. Oliver.

⁷⁹ Sir David Monro, 'On the Leading Features of the Geographical Botany of the Provinces of Nelson and Marlborough, New Zealand', *Transactions and Proceedings of the New Zealand Institute*, Vol. 1, 1869, pp. 6-17.

134: Hector to Hooker, 9th April 1877

Kew DC174, 641

ATL Micro-MS-Coll-10-17, 206-208

Colonial Museum of New Zealand, Wellington
9th April 1877

My dear Hooker,

I do trust you wont receive the cases of Plants in bad condition this time & that you will be able to get rid of any not required for Kew by way of Exchange. Would not such trees as *Podocarpus ferruginea* plant out at once? I had to fill up the boxes with what we had on hand or wait over a season. But in any case they wont cost you more than the cartage from the Docks as I paid the freight here. Among them however you will find a good many you never had before.

The only list we ever got showing what you have from N.Z. was of ferns. Was any other ever sent? It is not easy to get new or rare things now. I note your request about *Cordyline indivisa*.

The working up of the *Challenger* Collections appears to be admirably arranged for. It is a pleasure to see such a thorough business like programe as that given in *Nature*.

I have been very busy with the Museum & publishing. We have had some magnificent finds of fossils of late.

Haast has returned to the society after all he said but there is not a word in the minutes of the Canterbury Phil. Institute about your decision re Sumner case. Nor have they communicated with the Govn. of the Institute about it. I think it mean conduct after all that has passed.

With kind regards

Yours Sincerely

James Hector.

135: Hector to Hooker, 31-5-1877
Kew DC174, 642
ATL Micro-MS-Coll-10-17, 209-211

Colonial Museum of New Zealand, Wellington
31st May 1877

My dear Hooker,

I was absent on the West Coast when last mail arrived & departed so that I only got your letter of 28/3/77 on my return.⁸⁰ I do hope this last consignment of plants will reach you in good order as some of them were very costly. It is not as it used to be in the early days when I could send or go out on a six months expedition among the Mts. & collect at leisure. Now they are in such a hurry & the facilities for getting about to the so-called settled districts are so great that there is really no time for careful collection except for the work in hand, which is Geological. Buchanan is very much tied up with office work now & I am sorry to say none of my young hands know plants or collect them. It will be very difficult therefore indeed to get many of the plants you mention in your list but I will do my best.

I have just been reading your report of the Meteorological Comtee. & Evidence & it is by far the most suggestive & satisfactory Blue Book I ever saw. It cant fail to start Meteorology on a sounder basis. It does always seem to me that it would be better if we observed both Tides & Atmospheric pressure waves in Lunar Intervals & not Solar & observed Vapour Expansion in Solar Time.

I enclose some scraps of Vol. IX which is in the binders hands now.

Ever Sincerely Yours
James Hector.

⁸⁰ We have been unable to locate a copy of this letter. Hobbs & Yaldwyn have Hooker to Hector 10 February 1877 followed by 30 May 1877.

136: Hector to Hooker, 29-6-1877

Kew DC174, 643

ATL Micro-MS-Coll-10-17, 212

Colonial Museum of New Zealand, Wellington

29th June 1877

My dear Hooker,

I am glad the Plant Cases have reached you & I trust they will give satisfaction this time. A number of the things you ask for can only be got in the extreme North & South but I wont forget when there is a chance. I have had a very bad fever from a burst drain under my office & am up for the first time after 3 weeks in bed so I wont write more being shaky & weak.

Ever Yours Sincerely
James Hector

The sheet of the letter press of the grasses was only an uncorrected specimen sheet. I will attend to all the hints you kindly give.

137: Hector to Hooker, 23-8-1877

Kew DC174, 644

ATL Micro-MS-Coll-10-17, 213

Geological Survey, N.Z., Wellington

23rd August 1877

My dear Sir Joseph,

I must write one line of congratulations to you on receiving so well deserved distinction.⁸¹ I made a good recovery from my fever, but I feel a little out of sorts again to day somehow. Perhaps it is that I have been trying too much of late. I am sorry beyond measure that so many of the plants failed. It is very disheartening as we took every possible care.

With kind regards in which Mrs. Hector joins to Lady Hooker & Miss Hooker
Ever Sincerely Yours
James Hector.

I envy you the trip. I enjoyed 2 weeks there last year very much.

Give my best congratulations to Dyer.⁸²

⁸¹ Hooker was created GCSI in 1877.

⁸² William Thiselton Dyer married Harriet Anne Hooker, Joseph Hooker's daughter, in 1877.

138: Hector to Hooker, 19-3-1878

Kew DC174, 646

ATL Micro-MS-Coll-10-17, 217-219

Auckland
19th March 1878

My dear Sir Joseph,

This will introduce Mr. Carleton, the V. Chancellor of our University who is returning to England. He is to apply to the London University on matters relating to Examinations &c. & as you are a great power in that body I will be glad if you can assist him. Perhaps you will kindly make him acquainted with the Registrar.

We have just closed the annual meeting of the Senate which is the reason for my being at this end of the Colony.

I was much interested with your notes on Colorado & hope to see them at length.⁸³ Just before I left Wellington I sent two books, one from Buller, & the other from myself & Mrs. Hector to Mrs. Dyer. I don't think I advised you of them.

Sincerely Yours
James Hector

Sir Joseph D. Hooker K.S.I.
Pres. Royal Soc.

139: Hector to Hooker, 21-6-1878

Kew DC174, 647

ATL Micro-MS-Coll-10-17, 220-222

Geological Survey, N.Z., Wellington
21st June 1878

My dear Sir Joseph,

By this mail you will get your copy of Vol. X of our humble Transactions.

I enclose a loose copy of Kirks paper on the additions to your Handbook as it may be useful to you.

I also enclose a copy of an interesting paper on our Mineral Waters by Skey.⁸⁴ You may like to give it to some periodical that records such matters.

⁸³ Hooker to Hector, 30 May 1877, "I go to Colorado at the end of June with A Gray & Huxley."

⁸⁴ W. Skey, 'On certain of the Mineral Waters of New Zealand', *Transactions and Proceedings of the New Zealand Institute*, Vol. 10, 1877, pp. 423-448.

In separate parcel I also send a few early plates of Buchanans illustrations of the N.Z. Grasses. The whole of the two first parts are in the binders hands but will not be ready before the mail closes.

I am hard at work preparing for the "Session" & have a lot of very interesting Geological work to bring out. During the past year we have been working up the Lower Mesozoic formations & have a grand harvest of fossils from Carboniferous – Jurassic Strata. I have got the equivalents of the N.S.W. Coal formations & the stratigraphy which is quite clear tends to give them a Triassic age. We have at last found *Glossopteris* in N.Z. – and quite distinct in its horizon from *Toeniopteris*.

The collection of timber specimens for Kew gets on slowly. It is not easy to get good specimens of some of the most interesting woods but I hope before long to be able to advise you of their shipment.

Ever Yours Sincerely
James Hector.

140: Hector to Hooker, 19-7-1878 [Draft – not sent]

Te Papa MU000147/005/0009

Colonial Museum of New Zealand, Wellington
19th July 1878

My dear Sir Joseph,

It was very kind of you in the midst of all your heavy cares to find time to send me so much news in your letter of 22 May. Some of it I dont like viz. your retirement from the Chair of the Royal.⁸⁵ Your reason is weighty – that you cant find time for original work – but on the other hand consider how you have raised the tone of the Society from mere dry as dust to active life. Your influence has stimulated accurate investigation in all branches of observation. I dont say your influence is yet shown in the "Transactions" but somehow you have created a feeling there that the R.S. is on a level with the times & may be safely taken as a sure guide in the most advanced notions of the day. The fact is that a Naturalist – in the widest sense of the word – should wield the mane[?] of the Royal Soc. ----- encouragement of mental Pseudopodia is wanted able to grasp if right & attack in a final direction if the prey is worthless & not the fostering of articulate ----- is formulaic that can real so far – no further until the next moulting that is enforced by outside & unrecognised workers.

[Unsigned]

⁸⁵ Hooker to Hector, 22 May 1877, "I have announced my retirement next November, to the kindly expressed regret of the Society & myself, but I really could not keep it & do any original work at all. The vast mass of incidental duties it drags after it – are so engrossing & so onerous – that it is impossible to keep them up."

141: Hector to Hooker, 4-1-1879
Kew DC174, 648
ATL Micro-MS-Coll-10-17, 223-225

Colonial Museum of New Zealand, Wellington
4th January 1879

My dear Sir Joseph,

I have just ret'd. from a most interesting exploration of the King Country between the Mokau & the Waikato, being the first European that has been allowed to pass the Aukati since the commencement of the War in 1860.

I enclose a new plant I found and will be glad of your opinion of it. You will see from the note with it that there is a matter of ethnological interest attached to it.

I was absent 5 weeks & being all the time with Rewi Maniapoto & a lot of other ex-rebels.⁸⁶ They were very friendly to me I must say but they won't let any one else get through yet for a while. I used the opportunity to prepare their minds for the advent of the Iron Horse & found a very fair line for the great N. Railway to Auckland.

But I have just returned & by next mail will send you a printed account of my trip.

With all the best wishes of the season I am
Ever Yours
James Hector.

142: Hector to Hooker, 26-4-1879
Kew DC174, 649
ATL Micro-MS-Coll-10-17, 226-228

Colonial Museum of New Zealand, Wellington
26th April 1879

My dear Sir,

I write to thank you for the copy of your most interesting Lecture on Plant distribution which you so kindly sent me. It is the most suggestive paper on the botany of plant I have read, and will be a great help to Palaeontologists as well.

I notice with reference to our Flora that you exclude representation of Acacia & Proteaceae. I presume you had in mind Sophora & Knightia but that you do not consider them as properly representative of their Australian congeners.

⁸⁶ Hector gives an account of the early of the trip, including meetings with Rewi Maniapoto, in a letter to his wife dated 27 November 1878 (Hocken Library, MS-443-3/17/13).

I have never completed my account of our fossil flora, but have made great progress with it since I saw you. There is no doubt now as to the identity as far as it goes of our Jura. & Lias. Flora with that of India & Queensland but after the first terrestrial beds in the Cretaceous epoch the flora is quite as varied & nearly identical with the existing flora in general facies.

By this mail I have sent some seeds & now enclose an early proof of the Botanical Section of the forthcoming Vol. XI of the N.Z. Transactions.

Sincerely Yours
James Hector.

143: Hector to Hooker, 17-2-1880

Kew DC174, 651

ATL Micro-MS-Coll-10-17, 230

Colonial Museum of New Zealand, Wellington
17th February 1880

My dear Hooker,

I give this note to introduce Mr. Justice Gillies who is off for a trip to England with Mrs. Gillies & they being great in garden work would like to see Kew to best advantage.

Mrs. Gillies is a niece of the late Dr. Sinclair to whom you refer so often in your Fl.N.Z.

With the best wishes of the season to Lady Hooker & yourself,
Ever Yours Sincerely
James Hector.

Sir Joseph Hooker
Kew.

Mr. Justice Gillies
23 Bedford Place
Russell Square
Auckland, N.Z.

144: Hector to Hooker, 17-7-1880

Kew DC218, 157

Wellington
17th July 1880

My dear Hooker,

I have just recd. your kind note of Feb. 20 as it went to Sydney & missed me there. I am glad you are pleased with the “grasses” the final part of the Folio Edition is only waiting for the last of the letter press Index &c. the Printing office being blocked with Parliamentary work. Just fancy they have not passed the Institute vote £500. I wish some one would show up this very false economy in *Nature*. I have just sent Vol. XII to *Nature* – also Vol. XI & the General Index so they might get a Review of our work & allude to the disallowance of the vote. The £500 spent in printing is the means of distributing 1570 vols. 200 to all parts of the world for which valuable exchanges are sent in return. 1275 are given free to members of the affiliated societies, each of whom subscribes £1.1/-. This since £1275 is spent locally in keeping up Museum & maintaining an interest in science in such different centres of population. Without the volume it will be difficult & indeed impossible to get members to continue their subscriptions.

The organisation of the Institute has now stood the test of 12 years and has given perfect satisfaction. The only row that has taken place or complaint made being that ridiculous affair of Haasts that you settled for us. The whole £500 goes in printing – not a penny on salaries or other charges than for Press work. The Editing & drawing of Illustrations & writing of Papers & Contributions is all done as a labour of love without remuneration.

I will keep the *Cordyline* question in view but I thought it was all settled.⁸⁷ I have taken measures to rediscover *Dactylanthus*. It is in a remote part of the Country only.

With kind regards to Willy
Ever Sincerely Yours
James Hector.

⁸⁷ Hooker to Hector, 20 February 1880, “Do pray get someone to look up *Dactylanthus* & send it to me in spirits ♀ & ♂ - It is a shame that so curious a plant should be so little known – something allied to it has been found in New Caledonia. Also I am in distress about *Cordyline* – It is monstrous that 20 years after the publication of the Handbook we should still be so ignorant of the limits of the species.

145: Hector to Hooker, 3-12-1880
Kew DC174, 652
ATL Micro-MS-Coll-10-17, 231-233

Colonial Museum of New Zealand, Wellington
3rd December 1880

My dear Hooker,

I have to thank you in the name of my children for the kind present of "Henslows botany". They send their Photos. for your inspection & I trust you will discover some promising botanistiferous points in their features. I must also thank you for the kindly article in *Nature* which will have a good effect.⁸⁸ I fear the estimation of science is not deeply rooted when they deal so lightly with it. I am not long back from Melbourne where I arranged the N.Z. share of the Exhibition and made a fair show for the Colony. I send you a Catalogue & a copy of my pamphlet, tho, you may have got them previously. I am hard at work at present trying to finish the development of our manufacturing industries without having recourse to pernicious protective principles of politics. Our Insulated pristine & abundant natural resources should give up all the protection we need, but our merchants are mere agents for home exporters & their action in underselling all Colonial produce creates a very bitter feeling. Free trade is certainly not quite the same thing here as at home in practice tho the principle is the same. Still I hold to it & think it better that the public should share the expense of starting new avocations by a bonus system rather than by prohibitive import duties, as those are difficult to remit again. Mercantile affairs are reviving[?] here, & this only has been the depression. Produce & prices have & continue to surpass all anticipations. We want 1/2 million more people & wages at an equivalent food ratio. At present a man's food & lodging for a week only costs 16 hours labour!!

Ever Sincerely Yours
James Hector.

146: Hector to Hooker, 1-1-1881
Kew DC174, 653-654
ATL Micro-MS-Coll-10-17, 234-235

[Wellington?]
1st January 1881

My dear Hooker,

I promised many years ago to get some Maori figures Photo'ed for Darwin. It is more difficult than I expected but I send a few beginnings.

⁸⁸ Hooker to Hector, 7 September 1880, "I have just sent a fulminating letter to *Nature* about the disallowance of the Grant to the Institute & hope they will add pepper & spice to it. I am disgusted & turn my back on the New Zealand cabinet till the Colony repents in dust & ashes." *Nature* reported that "The [New Zealand] Institute itself is a model of organisation. The grant of the annual 500 was a wise step worthy of general imitation, and its sudden extinction is a cruel blow to science. ... We trust that later news will show that there has been some misunderstanding, or that the Government has thought better of it, and continued a grant that could not possibly be better spent." *Nature*, 16/9/1880, pp. 461-462.

Perhaps with practice we may get them more natural. There is a set for you & one for Darwin which I send by the hands of C----- . It has been quite refreshing to meet those two C----- out here.

When are you going to make your tour?

Yours, with all the best wishes of the season.
James Hector.

This is an advertisement for Hutton's successor at the Agricultural College, Christchurch, which he held along with his Prof. of Biology in the University College. No wonder he gave up!!! This mean establishment has an income from Land Endowments of over £6,000 per annum.

A Southern Agricultural College advertises for an instructor in Natural History, and each candidate on sending in an application is furnished with a document of which the following is a cop:- "Information respecting duties, &c., of the instructor in Natural History, &c. The instructor in Natural History, &c., will be required to instruct students both by lecture and by field and laboratory classes in, particularly, Botany (especially physiological), Geology, Entomology, Horticulture: a good knowledge of microscopy is, of course, indispensable. He will be required to undertake the superintendence of a vegetable garden, orchards, plantations, experimental grounds, and such plant houses as may be erected, and also the museum. (A gardener will be found by the college). He will also be required to carry out any investigation he may be requested to undertake, and to report thereon. It is necessary that the various subjects be taught especially in relation to agriculture; the general direction the teaching shall take will therefore be decided after consultation with the director of the school, under whose control the members of the staff are required to work. Lastly, he will be required to assist in maintaining discipline and order." What a refreshing and invigorating bill of fare is this, especially the delicate item "lastly," which seems to have been thrown in by an after thought so as to make the happiness of the applicant complete, and to whet his appetite to impart instruction to the extremest edge of keenness. Is there anything in the Southern climate which enables a man to live upon half-an-hour's sleep per diem, or have they days down there of 35 or 40 hours' length? No mortal being could go through the given programme in 24 hours a day, and I shall be anxious to know who gets the appointment, because if he keeps it three months and lives he will be a phenomenal prodigy as superior to Dr. Tanner as a live healthy nightmare would be to a guinea pig. But the seekers for an instructor in Natural History seem to mistrust whether they have not been too moderate after all, and therefore prudently throw in one or two indefinite "&c's," evidently intending to work their instructor on the plan of the Scotchman who gradually lessened his horse's rations to *nil*. What a burst of magnanimity is that where they say "a gardener will be found by the College," so that the instructor may know he will not have to wheel a barrow and plant cabbages. When I add that the salary of the child of Fortune who gets the appointment will be – hold your breath, gentle reader – £300 ! ! ! a year, that his annual vacation may be expressed by 0 or –, and that he will be confined to the college rather more strictly than a soldier to a barracks, I think I have said enough to impel the more devout of my readers to remember the lucky appointee in their prayers.

[The newspaper clipping, retyped above, was attached to the letter. We have not been able to find the source].

147: Hector to Hooker, 26-3-1881

Kew DC174, 655-656

ATL Micro-MS-Coll-10-17, 236-240

Colonial Museum of New Zealand, Wellington

26th March 1881

My dear Hooker,

I have just finished my batch of printing for the year & start in a few days for Melbourne to close our share of the Exhibition. I feel some difficulty in replying to your enquiries about Kirk – of his standing as a good botanist you can judge better than I can. Of his knowledge & experience as a practical botanist I cant say much. I dont think he has been tried in that branch. As a science teacher he is very good for ----- classes, tho rather given to long terms & mannerisms. He would do better for under-graduate work, except for his deficiencies outside his science. False quantities[?] dont do when the students are getting the Classics ----- – But he is a very good man in every way & would do his best in any position he might accept. It is very difficult for me to give you an idea of him. He is tall, very sparse, dyspeptic, reserved & given to methody preaching – about 50 or 52.

In a separate parcel I have sent you early sheets of Vol. XIII. If you can find any one to notice it in *Nature* in a kindly spirit it would be doing us a service when the Vote comes on. You will see that Colenso is doing some critical botany & that Armstrong wants to review the old nomenclature of Ferns. Knight asks me specially to call your attention to his new Lichen. Buchanan has made a splendid collection of Alpines from my old ground & I hope by next mail to send you a lions share of the plunder.

We have been greatly pleased with Miss North & delighted with her drawings. She is quite a wonder in the way of industry & genius[?]. I am sorry she suffers so much from Neuralgia contracted in Japan. I advise her to spend a few weeks quietly at the hot springs & then flee for home where she will get comfort & rest – as climate is a very second matter in such cases.

I am so sorry I cant see more of her & act as [her] -----, but this Melbourne work will call me off at once. She has made some fine pictures here.

I am going to send all our best timbers from Melbourne to you. I could not do so from Sydney as I had to husband my resources & show them over again. I send you a set of Photos of the Sydney Exht. & will send a set of the Melbourne ones when I get one.

Ever Sincerely Yours
James Hector.

148: Hector to Hooker, 17-7-1881

Kew, New Zealand and Tasmania Misc 1843-1928, 56
ATL Micro-MS-Coll-10-57, 77-78

Colonial Museum of New Zealand, Wellington
17 July 1881

My dear Hooker,

The Timber specimens have been shipped from Melbourne addressed to Dr Dyer & the Bills of Lading sent to the Agent General as he is to pay the freight. I am sorry I was not in Melbourne when they were packed as I fear the naming is not as perfect as it should have been, but I hope you will be able to make most of them out. The Kauri slabs are very fine, but will need dressing up. I had to send when I could get & will go thro' the list & compare with yours & endeavour to procure what is wanting to complete your order. I am just closing up the Exhibition matters & will be glad when I am done with them as it has been a weary business. The Colony has done well & taken most prizes of all the Colonies after Victoria!!

I saw Kirk the other day in Ch.Ch. He is settling down to his work as lecturer at the Agricultural College. He will be a good man for that work, & it will be permanent as the College is richly endowed (£6,000 per am) & out of reach of Parliamentary changes.

Ever Sincerely Yours
James Hector.

149: Hector to Hooker, 13-8-1881

Kew New Zealand and Tasmania Misc 1843-1928, 58
ATL Micro-MS-Coll-10-57, 80-82

Colonial Museum of New Zealand, Wellington
13th August 1881

Mr dear Hooker

I was glad to get your note by last mail & to learn that you had been enjoying a real holiday.⁸⁹ I am sure no one deserves it more.

Before this reaches you, you will have got the Timbers which were sent thro' the Agent General. All but one sample a paper cutter which I post by this mail with an inscription cut in Moa bone for your acceptance. I have imbedded it in the report of the Education Dept. which may interest you.

⁸⁹ We have not been able to locate a copy of this letter. Hobbs & Yaldwyn have Hooker to Hector 7 September 1880 followed by 24 January 1882.

Buchanan is working o' nights very hard at the Alpines got last year & has found some very fine & new things among them. A complete triplicate set is being put aside for you & will go by next mail. His first paper will be read next Saturday.

The "House" has just voted a sum of £150 for a Botanical Exploration of the Tararua & Ruahine Ranges in the North of this District, so I may be able to send you some live plants. They have had their usual wrangle over this Dept. & the abuse this time has come from the men who have the handling of the Enormous College Endowments in Ch.Ch. which produce very little real benefit [therefore] they are jealous of the working bees!!

Yrs Ever
James Hector.

150: Hector to Hooker, 10-9-1881
Kew DC174, 660-662
ATL Micro-MS-Coll-10-17, 245-251

Colonial Museum of New Zealand, Wellington
10th September 1881

My dear Hooker,

Last mail I sent a parcel of Buchanan's new Alpines & the enclosed notes should have been sent at the same time. You will notice that a mistake was made in the case of one plant in that parcel which I now rectify by sending the plant that should have been sent. The collection is turning out well & I will be able to spare you a fine set to replenish your old herbarium stock.

I enclose a clip of our proceedings 2nd & 3rd meetings W.P.S. I sent the first two mails ago. It would help us much if a short notice could be put in *Nature* as in former years.

Yrs Truly
James Hector.

I suppose you can publish Buchanans notes. It will be 6 or 8 mos. before they can be published out here.

[Notes attached, two pages, Buchanan's hand]

Raoulia mackayi, Buchanan N.S. Not the specimen erroneously sent last mail under this name, which was *Helichrysum youngii*. JH.

Specimen herewith.

A slender open foliated plant, stems 2-3 inches long, prostrate branches 1/2-1 inch long, erect or depressed. L----- membranous, spreading, 1/2-3/4 inch long, narrow, linear-oblong, round on the tip, apiculate, covered on the upper third on both sides with white, loose, silky wool, veins reticulate; Heads small, 1/8 inch across, involucrial scales 1/4 inch long, in 3-series of 8-9 each linear, or narrow oblong, acuminate or obtuse, scarcely radiating at the tip, inner series very narrow, the whole shining, pale yellow, florets numerous, 50-60, receptacle flat, pappus hairs few, slender, pilose, not thickened at the tips, ----- glabrous, with a thickened areole at the base.

The open silvery foliage and scattered golden coloured flowers of this small swamp plant, as it is usually found on dark peaty bottoms is very attractive. It is evidently allied in its general features and also in its pappus hairs not being swollen at the tips to *Raoulia tenuicaulis* Hook fil. but the large reticulate leaves and numerous florets, determine its class. as a new species of *Raoulia*, if its foliage does not ally it more closely with *Gnaphalium*. Named in compliment to Mr. A. Mackay of the Geological Survey, as a successful collector, who discovered the present species on Black Peak range at 5000 feet alt.

Notes on the Genus *Raoulia*.

The Genus *Raoulia* may be considered as one of the best represented in New Zealand both as regards numbers of species, and abundance of plants, not only do they enjoy an almost immunity from fire, but they increase and spread on the ashes of other plants, they flourish on the most barren ground, and cover poverty of soil and gravels with much floral beauty. On river flats and mountain sides, they are equally abundant, and are likely to remain so, being worthless as food, probably as sand binders and in fixing springy slopes, they might possess some value, and also in fixing the shingle of River beds. *Raoulia australis* and *R. tenuicaulis*, on the shingle bed of a River are very attractive, covering large patches with bright yellow flowers, and *Raoulia mammilaris* the vegetable sheep of the mountains is also a remarkable plant.

Those collected of this Genus are *Raoulia australis*, *R. tenuicalis*, *R. grandiflora*, *R. mackayi*, *R. parkii*, *R. subsericea*, *R. glabra*, *R. bryoides*, *R. mammilaris*, *R. hectorii*, *R. mackayi*, *R. parkii*, *R. subsericea*, *R. glabra* [Last four names repeated].

151: Hector to Hooker, 10-10-1881

Kew DC174, 658-659

ATL Micro-MS-Coll-10-17, 242-244

Colonial Museum of New Zealand, Wellington
10th October 1881

My dear Hooker,

It is very kind of you to send the box of books which will be a welcome addition to the Library. By this mail I send another packet of "Alpines". Buchanan is working away in the evenings at them & his papers will all appear in next Vol. with several plates. I quite agree that it would be better if the Colony had a better organised Botanical Establishment but it is one of the many drawbacks of so many centres of population that we cant get concentrated expenditure for such an object. All I get every year only pays one gardener & a few occasional labourers & I have 90 acres to keep in order as a Public Domain. The monthly account is only £20 to £25. My own & Buchanans services are entirely gratuitous & in many ways the gardens get work done at the expense of the Geol. Surv. & Museum Votes. Our collections are only made by private efforts as I have no money to pay collectors. That is why I cant get the rarer plants & seeds from remote districts. I have a good collection of Auckland Is. things in our "bush house" & as soon as they are established I will try to send you a share. But we have been so unlucky in our transmission of plants. I dont know how it happens, but those sent from Kew have always reached us in quite a bad condition. If you can get a list made of the things that you most desire I will make all effort to send them away in good order. I quite feel that we deserve the chiding you give us in your last note, but it is not the fault of the Colonial scientists who have now hard work to get anything done.

I have sent you a Rept. of the Commt. on Colonial Industries & I suppose I will have to bother you for advice as to the best way of getting olive trees in large quantity & other plants of economic value to us.⁹⁰ In all parts of the Colony they are beginning to thirst for other pursuits than wool, gold, & grain growing & the great cry is to develop local Industries. The worst is that we have rather an ignorant class of people to deal with & who are prejudiced against what is most suitable to the climate. They will persist in conducting their agriculture as if they had to deal with the climate of Scotland instead of that of the S. of France. You will note that Sir Geo. Grey gave some interesting evidence about this.

Next vol. of our Transactions is going to be strong in Botany. There is a lengthy paper by Dr. Spencer on the Fresh Water Algae among others. G.M. Thomson is bringing out a new work on our Ferns! & proposes to start a scientific periodical in Dunedin. Gradually workers are springing up in all directions & the seed that this Dept. has been sowing for many years past will soon begin to bear fruit in the form of local monographs. I hope the Timbers sent from Melbourne have reached you in good order by this time. Unfortunately I had to leave before they could be packed, but I trust they did not make a mess of the names as on the former occasion. There was nothing very rare among the woods – only the common market sorts, but they were handsome specimens.

Sincerely Yours
James Hector.

⁹⁰ Colonial Industries and Tariff Committee (Final Report of, Together with minutes of proceedings and evidence), Appendix to the Journals of the House of Representatives, 1881 Session I, I-10.

152: Hector to Hooker, 25-3-1882
Kew DC174, 666
ATL MS-Micro-Coll-10-17, 252-254

Wellington
25th March 1882

My dear Hooker,

I have just retd. from the meeting of the University Senate which was this year in Auckland - & find your note of Jany. 24th about the Timbers.⁹¹

I am sorry they are not more satisfactory, but you must only take them as part of the collection you are to get. You will notice that they were Exhibits that I obtained at the close of the Melbourne Exhibition & of course I did not like to name them when the Exhibitor had refrained from doing so – but from your list I fancy some of the names must have been rubbed off. Unfortunately I had to leave Melbourne before the specimens were packed. What you say about the want of a properly constituted Botanic Garden in N.Z. is quite true but until the jealousies engendered by the late Provincial system of Gov. have disappeared it will be impossible. A sufficient vote for a Colonial Garden could not be obtained at present. The small sum that was voted for the grass Book was a fad of Sir. George Greys & was a political move.⁹² The vote could not have been obtained for a garden – so you must not be hard on us. Our botanical efforts have been chiefly amateur and with very slight success. I will write more fully next mail as I have only short time now. I enclose the Botany section for the forthcoming Vol. XIV Trans. N.Z. Inst. so that you may see what has been done in the past year.

Sincerely Yours
James Hector.

Mr. Farmer has just arrived & brings news of you!

⁹¹ Hooker to Hector, 24 January 1882, "The New Zealand woods have at last arrived & we have gone over & noted the whole collection ... I wish I could speak well of it as a whole, & I fear you will think us very [censorious?] but now that the other colonies are sending such fine & well named collections, & India superb ones, it does seem strange that New Zealand whose trees are so well & long known, should contribute so poor a set of timbers. ... What you want is a properly organised Bot. Garden, like the Australian, Indian, Ceylon, Mauritius, the Cape, Trinidad, Jamaica, Guiana, & Hong Kong – all these colonies are immeasurably ahead of you in this respect. Meanwhile your money is wasted on futile books on Grasses, the object of which it is difficult to conceive – dried specimens of the useful kinds would be cheaper to prepare & better suited to the wants of the ignorant."

⁹² John Buchanan, *The Indigenous Grasses of New Zealand*, Wellington, 1878-1880.

153: Hector to Hooker, 23-4-1883
Kew DC174, 670
ATL MS-Micro-Coll-10-17, 257-259

Northern Club, Auckland
23rd April 1883

My dear Hooker,

I have been in this part of the Colony for a month now so there may be letters for me in Wellington that I have not yet received.

Cheesman tells me that you have written to him expressing a wish to undertake the production of a New Edition of the Handbook to the Flora.

This is good news indeed as when you last wrote to me on the subject I gathered that you thought we must now shift for ourselves in such matters.

In my opinion this would be very unfortunate as after all our workers out here are mostly self taught amateurs whose work can only be made useful by being sat upon by some great authority like yourself. This would be a very favourable time if you could write me a letter that I could use, setting forth reasons for the publication & at the same time if you would write to the Govnr. (who is a great supporter of science) also to Mantell & Knight.

As soon as I return South I will send you an early copy of Vol. XV of the Trans. which is now printed. It is chiefly Zoology & Botany this year.

I have been in the King Country for the last month working at country previously unexplored – but I have been too late for any plants.

Yours Sincerely
James Hector.

154: Hector to Hooker, 18-5-1883

Kew DC174, 671

ATL MS-Micro-Coll-10-17, 260-262

Colonial Museum of New Zealand, Wellington

18th May 1883

My dear Hooker,

Your letters of Feb. & March both reached me in Auckland as the Govr. was there & they were in his bag.⁹³ I at once sent on the R. S. Paper re Colenso to Haast and asked him to sign & send on to Buller who is at Cambridge at present & I also wrote to Buller to sign & return to you direct by this mail – so I hope you will get it without delay.

It is very kind to offer more Pamphlets which I can assure you will be very acceptable.⁹⁴ The last lot you kindly sent us I had sorted out & bound as far as possible.

I have ----- a Ward Case packed for you with live Alpines that I have had in pots established for three years – so they should carry! The lot I had in the Case for you about 6 mos. ago nearly all damped off. I thought it better to keep them for a few months to test them.

I have seen a lot of young Peek & like him very much. He will give you all the N. Z. news.

Yours very truly
James Hector.

155: Hector to Hooker, 10-7-1883

Kew DC174, 672

ATL MS-Micro-Coll-10-17, 263-264

Colonial Museum of New Zealand, Wellington

10th July 1883

My dear Hooker,

I enclose the B/L for the Case of plants that I have sent by the *Ionic*. They should reach you in about 45 days from now. They are all well established in pots & are good things so that I trust they will arrive in good condition.

There is much pressure being brought on Govt. at present to take a vote for a Students' Flora & Botany text Book for N.Z. Students. I think you should have the first offer

⁹³ Hooker to Hector, 11 March 1883, "Colenso has signified to me his wish for F.R.S. & when I consider the length & importance of his contributions to Science I think him most well deserving of the honor. It is very essential for this that he should have the signatures of all the fellows in the Colony – yourself, Buller & Haast."

⁹⁴ Hooker to Hector, 11 March 1883, "I am sending you another box of miscellaneous pamphlets from which you or your Institute may pull out which you want & distribute or burn the rest."

of any grant for such a purpose & have said so to Govt.!! What is it that makes you always growl at our Botany?⁹⁵ We do wonders with the money we get. Everyone admits that. What else can we do?

Yours in haste
James Hector.

156: Hector to Hooker, 16-11-1883

Kew DC174, 675

ATL MS-Micro-Coll-10-17, 226-267

Colonial Museum of New Zealand, Wellington
16th November 1883

My dear Hooker,

I am not a little astonished at your report on the case of plants I sent you by the S.S. Ionic in charge of Dr. Menzies who had a very similar case for himself to give to a friend near Norwood[?]. I can only say that with two exceptions they were all well established pot plants & that in each pot was a tally with the number referring to the list.

Your account of the condition in which they arrived at Kew is quite incomprehensible.

In haste

James Hector.

⁹⁵ Hooker to Hector, 6 May 1883, "Thanks for the Museum Report – Alas Botany is conspicuous by its absence!"

157: Hector to Hooker, 28-3-1884
Kew DC174, 677
ATL MS-Micro-Coll-10-17, 271-273

Wellington
28th March 1884

My dear Hooker,

By separate post parcel I send you an early pull of the Section Botany of the XVI Vol. of the N.Z. Inst. Transactions which I hope to get out in about a month hence. You will be rather astonished I think at Colenso's paper & the number of new species he makes.⁹⁶ I don't pretend to judge but I do think some botanist should make a deliverance (as the Scotch lawyers say) on the subject of whether such a paper is to be considered scientific or not.

I had a pleasant trip about a month ago with the Govnr. (Sir. W. Jervois) round Stuart Island & to the West Sounds. I got some live plants but nothing new. I fancy there is a good field yet untouched for the Botanist at Port Pegasus. We did not land unfortunately but I could see that the conditions are very different as far as the uplands are concerned. Kirk has spent some time this season in the North of Stewart Island & ascended Mt. Anglern. Buchanan had a fairly successful trip to Campbell Island & made large collections both dried & live, but by some stupid mistake all his live plants were lost after the vessel reached a N.Z. port, but thro no fault of his.

I enclose the plates that should have gone with the "Botany" sheets. Also some untuned prints from photos of the Wn. Bot. Gardens that I am having autotyped[?] for next years Report.

Yours Ever Sincerely
James Hector.

Capt. Fairchild was asking kindly for Willy.

⁹⁶ William Colenso, 'A further Contribution towards making known the Botany of New Zealand', *Transactions and Proceedings of the New Zealand Institute*, Vol. 16, 1883, pp. 325-363.

158: Hector to Hooker, 12-9-1884
Kew DC174, 678
ATL MS-Micro-Coll-10-17, 274-278

Geological Survey N.Z., Wellington
12th September 1884

My dear Hooker,

I have just posted to Sir. Hry. Lefroy at the suggestion of our Govnr. Sir W. Jervois an application certificate for his election as F.R.S. I think few R.E. Officers have better earned the distinction so I venture to ask you to give his nomination your powerful support.

I have your letter of June last re *Cordylines* before me – but I am much puzzled – in fact as much as you can be.⁹⁷ The only point on which Kirk & Colenso rely for distinguishing *C. indivisa* of N. & S. Is. is the number of heads in the N. I. species, but of course that is no character at all. In fact I have seen quite as many many-headed specimens in the South as in the those [sic] localities in the North where bruises by cattle & axemen have not been an efficient cause divarication. Still it is curious that the veins on the underside of all N. Is. specimens are green & glaucous & S. Is. species are red. We have have [sic] had both forms in cultivation, but they die off in a most extraordinary manner after a few years & never flower with us. I have now got a collection of all our *Cordylines* underweigh for you & I enclose a small quantity of seed of the form of *Cordyline indivisa* that grows on Mt. Egmont. I am getting another case of plants ready for you but it is very extraordinary how unfortunate we are in our shipments to Kew. Did you not get the *Pisonia Saporta*[?] & other rare seeds I sent you last year. I dont see any acknowledgment of them in the Report. [*Marginal note, other hand:* Unable to trace these. W.W.] I put in some at the same time in my own greenhouse & they all came up! The *Pisonias* are now 12 inches high.

Ever Sincerely Yours
James Hector.

We get our plants out from home best when they are packed hard in a close box without glass! I am going to try this plan with yours.

⁹⁷ Hector is probably referring to Hooker's letter of 8 May 1884, which read, "After 42 years experience of New Zealand Botany I am faced by the fact that I do not know your *Cordylines* & that the only way to know them is to get tops of trunks 2-3 feet long with leaves & inflorescence attached, & notes of height etc. etc."

159: Hector to Hooker, 1-1-1885

Kew DC174, 676

ATL MS-Micro-Coll-10-17, 268-270

Colonial Museum of New Zealand, Wellington
1st January 1885⁹⁸

My dear Hooker,

I must write a line to wish you the compliments of the season & to enclose a photo. of your godson Lyell which Mrs. Hector wishes me to send to Lady Hooker. I am busy with the usual work but having lost my right hand man Cox who was sent out to me ten years ago by Ramsay I am having much bother breaking in a new team. I am afraid poor old Buchanan is failing fast, but he will persist in working away as hard as ever & I believe will drop in his collar. I am glad to say the new Govt. have given something to Kirk on my recomd. viz. to travel over the Islands & make an accurate census of the forests. I wanted this done 15 years ago as the proper basis of Forest conservation. During the interval of inaction I believe several millions worth of Forest has been wontonly destroyed.

With very kind regards to Willy
Ever Your Sincere friend
James Hector.

160: Hector to Hooker, 19-11-1885

Kew DC174, 681

ATL MS-Micro-Coll-10-17, 279-281

Colonial Museum of New Zealand, Wellington
19th November 1885

My dear Hooker,

I enclose a Photo. of a *Fourcraea*⁹⁹ that has flowered with us this year. We have had it 14 years & got it from a Mr. Bennet who raised them from bulbs taken off a plant in Regent Park Garden about 17 years ago. It has excited some interest & I would be glad if you can help us to the name.

Sir Geo. Grey has two other species that are different & as the flower is cream with lavender streaks & the height is 30 ft. it does not agree with *F. gigantea*, *longera* or *tubiflora*. I hope to send you a coloured drawing of the flower by Buchanan next mail. Poor B. has retired on a pension so we have lost a valuable help.

I hope Sir W. Jervois will not be forgotten at the Royal this year. He really deserves it as he is a good worker & patron of science.

⁹⁸ 1884 in original.

⁹⁹ We think this is a confusion of *Fourcloya* / *Furcraea*.

I am sorry I am not to be at the Colonial Exhibition next year to meet old friends, but you will have Haast.

I had a note from your son Brian t'other day for Melbourne. I am scheming to get him into my department but tho very shorthanded it is hard to get Govt. to increase the staff at present.

Ever Yours Sincerely
James Hector.

161: Hector to Hooker, 11-9-1886

Kew JDH/2/1/10, 192

ATL Micro-MS-Coll-10-27, 643-645

Colonial Museum of New Zealand, Wellington
11th September 1886

My dear Hooker,

I have just recd. your kind note - & will look[?] out the specimens of grass (*Danthonia buchanani*) from Buchanan's types if I can find it - & will send it next mail. Buchanan lives in Dunedin now and is in very bad health. I have also had a letter from Dr. Dyer in which he says that you sent me a bundle of authenticated specimens of the N.Z. Flora. There is surely some mistake about this. 22 years ago I recd. by you a numbered list of Otago species of which I held duplicates & with that I made up a local Herbarium. It was left with the Otago authorities & was neglected & dispersed. Our present herbarium is all of species determined by Buchanan from yr. Flora N.Z.

About the other matter – dont please bother the Colonial Office on my account as I dont care for such honours & would not accept them.¹⁰⁰ I am glad you like Haast. He can make himself very pleasant & knows a deal about N.Z.

With kind regards
Sincerely Yours
James Hector.

¹⁰⁰ It seems likely that Hooker offered to intercede with the Colonial Office to help Hector get a KCMG, which had already been awarded to Haast and Buller that year. Hector was awarded his KCMG in 1887.

162: Hector to Hooker, 7-2-1894
Kew JDH/2/1/10, 188-189
ATL Micro-MS-Coll-10-27, 636-640

Ratanui, Petone, N.Z.
7th February 1894

My dear Hooker,

You need never scruple to bother me if there is a chance of my being able to do you a service.¹⁰¹ I have seen Brian several times but not lately & I really don't know where he is if still in N.Z. I liked him very much. He is smart and thorough like his father. I helped to put him in the way of Mining Export work but since the present Govt. have come into power they have not known this possible[?] & have flouted me in a very marked way. So that I have very little influence to help others with. As an instance – the other day they got the loan of Murray – one of Selwyn's old assistants – now Geol. "Maid of all work" for the Mines Dept in Victoria. A good straight man & most unpretending & sound so far as he knows. Some years ago the Victorian Govt. asked the loan of me & I went with Murray & looked into the doubtful points & gave advice which has been acted on with good results. But when Murray arrived here the other day I was not in it & a subordinate of mine[?] with a Mining Man was told off to trot him over the country. Murray came privately to me & of course I gave him all the information he requested.

But its not kind of me to bother you about all my little troubles – I only mention them to show that whilst a few years ago I could have got a field for Brian with great advantage to the country & to himself – Now I am so checked by intrigue that I am helpless. However you may be sure I will do all I can – I have just recd. a powerful letter from Mueller on the subject which I will endeavour to make use of – It seems a hard case for Brian and his family – But he has gone under with a large majority. Things are very bad in all these colonies at present & perhaps worst of all in this because there is a total absence of frank outspokenness & an official glamour is thrown over the real condition of affairs for party & political purposes. Of course its only damming back the Catastrophe & it will have all the bigger "head" when it does burst & make an end of the "Fool's Paradise" we are living in. The problem of the right method of setting this country on a sound footing is far beyond the ken of the fools at present in power.

I am glad you can give such a good account of all your young folks.

I am a dreadful sinner in the way of not writing those letters I ought to write so that I have I fear lost many good friends & got out of touch with many of them. It has been uphill work for some years past & that must be my excuse.

My family are growing up. Eldest helps me in the Laboratory & is a fair chemist. 2nd Charlie is in Edinb. Studying Medicine & doing us credit – Turner & Rutherford seem to think well of him. The rest are still at school yet, there being five of them ranging from 15-8.

¹⁰¹ Hooker to Hector, 10 December 1893, "I hate bothering my friends about my children, & you had enough to do with Willy, whereby you gave me already too much to thank you for – but I do not think it quite fair to you, or to Brian, now in N.Z. permanently (if he finds a living) that I should not tell you something about him - & all the more as you may possibly have a chance of giving him a good word or hitch-up."

We live 8 miles by rail out in the country. I have the most glorious Fern Tree gullies. I wish you could see them. Young Veitch[?] was here the other day & was delighted. I have *Marattia* fronds 15ft long & *Cyathea medullaris* 40ft high. But it dont pay & the end must be the fire stack. They took the Bot. Gardens from me last year & cast them as a sop to the Town Council. Already they are chiefly a copse of *Ulex*! & no work is being done. I have just seen "Cook's Journal". It is very disappointing, but I look forward with much interest to your publication of Sir J. Banks' Journal.¹⁰² I wonder if they really missed noting the Kiwi!

With kind regards to Lady Hooker & all your circle.
Ever your sincere friend
James Hector.

163: Hector to Hooker, 31-3-1898
Kew JDH/2/1/10, 187
ATL Micro-MS-Coll-10-27, 634-636

Wellington, N.Z.
31st March 1898

My dear Hooker,

I was much pleased to get your kind note and the splendid portrait of yourself.¹⁰³ I have just posted a photo of myself which was taken last month when I was in Sydney attending the Science Association. I am glad you are pleased with the Maori Art Book. We are trying to do our best & it is gratifying to find so many old friends are satisfied with it.

You will have noticed that Kirk died suddenly on 9th inst. He has never been very strong. He had got as far as *Compositae* with his *flora* but the remainder is only in the form of notes. I have not heard what arrangement is to be made for completing the work. I have just returned from University Senate meeting at Dunedin & have only time to Catch the mail.

With very kindest thoughts from your old friend
James Hector.

¹⁰² Hooker to Hector, 10 December 1893, "I have found Banks Journal of Cook's Voyages, where it was said not to be, - in the Brit. Mus.! & I am in treaty with a publisher for editing it."

¹⁰³ We were unable to locate a copy of this letter. Hobbs & Yaldwyn terminates with Hooker's letter to Hector of 10 December 1893.

164: Hector to Hooker, 14-5-1898

Kew JDH/2/1/10, 186

ATL Micro-MS-Coll-10-27, 633

Colonial Museum, Wellington, New Zealand

14th May 1898

My dear Hooker,

I enclose a file of poor Kirks Flora N.Z. as far as it was finished when he died. I dont know how we will manage to complete the work. His mss. only completed the order Compositae & it is very rough. Beyond that the [its] only notes. The plates have not been touched. I thought you would like to see what he had done & I would be glad to get your opinion of it & any suggestions you care to make. He increased the size from small 8vo without authority. What was intended was a book like your Students Flora of the Brit. Islands 1870.

Ever Your Sincere friend
James Hector.

165: Hector to Hooker, 18-8-1898

Kew JDH/2/1/10, 190-191

ATL Micro-MS-Coll-10-27, 641-642

Colonial Museum, Wellington, New Zealand

18th August 1898

[*Tidy hand, signed by Hector*]

My dear Hooker,

Many thanks for your most useful letter about Kirks Flora. I agree with all you say. I urged Kirk not to pack the book with the introduced plants, but he would not even argue the point. Where can the line be drawn, as all garden plants might be included, and that would mean converting the work into a world-wide Flora!!

I have sent on your letter to Government and strongly urged to bring out Kirk's work as a classical fragment, and to employ Cheeseman to bring out a handy "Student's Flora" on the lines of your "Student's Flora", as far as the end of your Vol. I, N.Z. Handbook. The second volume hardly requires republishing for the purpose in view.

I have just received Mr. Massee's manuscript of the 1st Section of the N.Z. Fungi, and will get it printed somehow.¹⁰⁴ It appears to be a most valuable work.

With kind regards
Ever yours sincerely
James Hector.

¹⁰⁴ George Massee, 'The Fungus Flora of New Zealand', *Transactions and Proceedings of the New Zealand Institute*, vol. 31, 1898, pp. 282-349.