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JOURNAL OF A NATURALIST *in some little known parts of*
NEW ZEALAND, *by* WILLIAM COLENZO, ESQ., *in a Letter to Sir W. J. Hooker.*

EVER since the publication of the celebrated Voyage of Captain Cook a lively interest has been felt in all that concerns the productions of New Zealand. Of late years that interest has been increased tenfold, in consequence of the rapid colonization of the islands by British Emigrants. Still, to the Naturalist, it has been very much a sealed country. Many of the plants collected during Sir J. Banks' and Mr. Menzies' visits are yet lying in our Herbaria unpublished; and the "*Floræ Insularum Novæ Zelandiæ Precursor*,"* of Mr. Allan Cunningham, edited by ourselves, partly in the "*Companion to the Botanical Magazine*," and partly in the "*Annals of Natural History*," enumerates only six hundred and forty species (including *Cryptogamiæ*), and these chiefly the products of the northern island and of the shores of that island. It has been remarked by Mr. A. Cunningham, "When we consider how little has been seen of the Botany of the northern island, notwithstanding that Europeans (engrossed truly in mercantile speculations) have now been settled several years upon its coasts; that the plants of the interior of its more expanded parts from the

* Companion to the Botanical Magazine, vol. 2, p. 230.

eastern to the western shores, which lie in the parallels of 38° and 39° , are absolutely wholly unknown, for no Botanist would deem it prudent to attempt a penetration, whatever his zeal may be, to its inland districts through which extirpating civil wars so extensively rage; when we glance at the map and perceive its snowy peaks, and especially that of Mount Egmont on the immediate western coast, the apex of which towers 14,000 feet above the ocean, whose waves wash its base, the upper part from the peak downwards to an extent of 5000 feet being clothed with eternal snows; in fine, when we reflect upon the fact, that (excepting at its northern shore in Cook's Strait and at Dusky Bay on its south western coast) the Botany of the larger or middle island is, to this day, veiled from our knowledge, we cannot but exclaim at the rich store of vegetable productions which yet remains to be laid before us! For the "*Precursor*" contains perhaps but a tithe of what may one day be shown us; but a foretaste to excite our desires to behold what the future labours of Botanists may, it is hoped ere long, lay open to our eyes. Long since has that learned Botanist, Mr. Brown, remarked that the character of the New Zealand Flora known to us chiefly from the materials collected by Sir Joseph Banks, is to a considerable degree peculiar, although it bears also a certain affinity to those of the two great countries between which it is situated, and approaching rather to that of Terra Australis than to South America."

Since the period at which the above was written many plants from New Zealand have been communicated to me by Mr. Colenso, Mr. Edgerley and Dr. Logan, constant residents in the northern island; and Mr. Bidwill, Dr. Sinclair, Dr. Diefenbach and Dr. Hooker collected during their casual visits:—I cannot give a better idea of the value of their communications than by saying that whereas no species of Beech tree had ever been known to inhabit this group of islands, *four* distinct kinds have been brought to light by these researches, and are already published in our "*Icones Plan-*

tarum”.* Valuable as are the discoveries of all those gentlemen whose names are now mentioned, there is one of them who deserves more particular mention, Mr. Colenso, and who, if his health and strength be spared, and leisure from his arduous duties as a devoted Missionary be granted, will contribute still more than he has yet done to the elucidation of the Botany and Natural History, generally, of New Zealand. His continued residence in the Islands, his entire familiarity with the language, his acquaintance with the character of the Aborigines, his influence as one of the most energetic of the Church Missionary Society,† his liberality and hospitality to visitors (as the officers of H. M. Discovery Ships, Erebus and Terror, can testify) and his frequent journies, all give him advantages which no other traveller there has enjoyed; and admirably does he take advantage of the facilities he thus possesses. The pages of this Journal and more especially those of our “*Icones Plantarum*” bear witness to many of the discoveries made by Mr. Colenso. We have lately received a valuable Monograph of several new Ferns of New Zealand from the same pen, published in the Tasmanian Philosophical Journal, an admirable Memoir on the Fossil Bones of a bird allied to the Ostrich which, together with the specimens of the bones themselves, I have placed in the hands of Professor Owen;—and now I have lately had the pleasure to receive the following letter, giving a most interesting account of a three months’ tour across the widest part of the northern Island, which was productive of still more botanical novelties, and which I am sure will be hailed

* See Tabs. DCXXX, DCXXXI, DCXXXIX, DCLII and DCLXXIII, of that work.

† As a specimen of the services rendered to the cause of Christianity, I may observe, that there are now lying before me, admirably bound copies of the New Zealand Testament and the Prayer Book, each of them bearing the inscription, “At a time when no mechanic was to be found here (New Zealand) this book was composed and finished, binding included, by the writer, W. Colenso, Superintendent of C.M.S. Printing department in New Zealand, 1842.

with pleasure by every reader of this Journal. Great though the tide of emigration to New Zealand has been, the hills and the vallies are still clothed with their aboriginal vegetation: but ere the next generation shall have succeeded the present, its stately forests proved to be so valuable in yielding spars for the British navy will be levelled with the ground; and, as in St. Helena and other islands of limited extent, an exotic but naturalized vegetation will take their place; even the very animals now common will be extirpated. Already the majestic Cowdie, or New Zealand Pine is become scarce in many parts of the northern island, and that most remarkable bird, the *Apteryx australis*,* is almost extinct.

Very many of the plants alluded to in the following pages are here only mentioned by the numbers they bear in the collection sent to us by Mr. Colenso. Several of these have proved new: others require investigation and a comparison with specimens already existing in our own and other Herbarium, a work of much time, and I am unwilling to withhold the Journal from the public till such period as these plants could be named with accuracy. The circumstance is the less to be regretted, since the Botanist of the recent Antarctic Voyage, Dr. Hooker, is preparing a "*Flora of New Zealand*," in which Mr. Colenso's plants of the present Journey will be referred to according to their numbers.

Paihia, Bay of Islands,
New Zealand, September 1, 1842.

My dear Sir William,

Having recently returned from a three months' tour among the natives in the little known districts of this island, and having been fortunate enough to obtain some Botanical specimens, among which it is hoped several new and interesting

* See vol. 4, p. 312, of the Annals of Natural History, for an account of this bird, by Mr. Allan Cunningham.

species will be found, I promise myself the pleasure of going over my collection and culling for you specimens therefrom; which will not, I trust, be considered altogether unworthy of a place in your valuable Herbarium.

I have, I confess, hitherto postponed doing so in hopes of receiving some Botanical works of reference from England. I will not, however, delay any longer, choosing rather to trust to your charity to cover my numerous and egregious errors, than by waiting a still further indefinite period, procrastinate the pleasure which you, as a Botanist and a true lover of the science, will, I well know, experience on the receipt of the plants.

As I may possibly have it in my power to make a few remarks, *en passant*, on the Natural History, Geology, Aspect, and Inhabitants of the districts which I traversed, I have decided upon throwing my observations into the form of a Journal; by which, too, you may the better be able to ascertain, in some degree at least, the Botanical Geography and relative situation of those parts.

On Friday, November 19, 1841, I embarked at the Bay of Islands, in the schooner *Columbine* for the East Cape, (lat. $37^{\circ} 7''$) and, on the evening of Monday the 22nd, landed at Warekahika (Hick's Bay), a small bay between Cape Runaway and the East Cape. The surf being very high on the beach, and the captain of the schooner wishing to proceed on his voyage (to Poverty Bay) with as little delay as possible, the wind too being fair, I was obliged to scramble on shore through the breakers as expeditiously as I could. In the course of the evening I was not a little chagrined to find, that the package containing the whole of my specimen paper, &c. &c., had, in the hurry of disembarking, been left behind on board of the vessel, which was now rapidly receding beyond the horizon! I had landed at this place five years before in my former visit to these parts. Although night was fast closing around me, (and I felt very much exhausted, having had three days of fasting through excess of sea-sickness), I noticed growing on the sand-hills

near the shore, a small shrubby plant (1) with fleshy leaves and erect succulent stems; which, though not yet in flower, I supposed, from its 2-celled capsule, &c., to be a species of *Euphrasia*, probably *E. cuneata*, Forst.; that species having been found in similar situations a little further south, by Sir Jos. Banks, in 1769.

The next morning I proceeded on towards Te Kawakawa, a village on the sea-shore, about six miles distant. In my way thither I found, growing in sheltered spots among the sand-hills, a pretty little decumbent *compositaceous* species (2) which was quite new to me. Ascending a high hill, and gaining its summit, I observed a graceful-flowered plant growing secluded among the tangled brakes of *Pteris esculenta*; at first sight I hoped it might prove *Forstera sedifolia*; but, on procuring specimens, I found it to be a *Lobelia* (3), probably *L. littoralis*, R. Cunn. At Te Kawakawa I remained a day or two, much, however, too busily engaged with the natives to move out in quest of botanical specimens. From the cliffs in the immediate neighbourhood I gained several marine fossils; these are chiefly imbedded in indurated clay and conglomerate. During my stay at this place, one of the heaviest hail showers fell that I ever witnessed. The hail was large and rhomboidal, the one half (laterally) of each stone was composed of clear, and the other half of clouded, ice. The oldest natives speak of only remembering one such shower.

25th.—Leaving Te Kawakawa and travelling by the sea-side, we passed several of the Taro plantations of these natives, (*Caladium esculentum*, Vent.). These plantations were in nice condition, and looked very neat, the plants being planted in Quincunx order and the ground strewed with white sand, to which the large pendulous dark green and shield-shaped leaves of the young plants formed a beautiful contrast: small screens, composed of the young branches of *Leptospermum scoparium*, intersected the grounds in every direction to shelter the young plants from the violence of the N. and E. winds. The visitor to this locality, travelling along

the coast, is struck with the regular and pleasing appearance of the Pohutukawa, (*Metrosideros tomentosa*, A. Cunn.), which here forms a living and ever-green rampart between the sea-beach and the main-land; its roots and trunks, in many places, laved by the flowing tide. On these flat rocks of indurated clay I observed a peculiar kind of *Alga* (3a), which, boiled, is commonly used as an article of food by the natives of these parts: they call it *Karengo*. It grows large and quite procumbent; and is often dried up and caused to adhere to the rocks which it inhabits, through the great heat of the sun, after the ebbing of the tide. On the sandy beach near the East Cape I found a species of *Triglochin*(4), (*T. flaccidum*?) much finer than any I had hitherto seen. I did not (as in my former visit) go round the Cape, (a bold and high promontory, composed of indurated clay, reclining back in solemn grandeur, on the face of which, from the continual descent of *débris* from its summit and sides, nothing grows,) as it was near high-water; but striking inland I found, on a little sandy plain, a *Veronica* (5), which to me was quite new, and may possibly be a new species. It grew low and rambling, not exceeding 2 feet in height. Unfortunately it was not in flower; but after some little search, I obtained some spikes of the capsules of last season. About this time it commenced raining heavily, so I was obliged to give over botanizing. Our prospect, at this period of our journey, was anything but pleasant. Descending the side of a hill through a small water-course, I obtained a remarkably fine individual of *Acianthus rivularis*, A. Cunn., and also several specimens of a little plant, *Myosotis*, sp. 7, (6) with orbiculate or sub-spathulate leaves, and racemed flowers; I subsequently got the ripe seed of this. At night I pitched my tent at Te Pito, a small village three miles south of the East Cape. The rain continuing to pour down made us glad enough to obtain shelter any where; although in our present position, on the side of a very steep hill quite open to the South Pacific which rolled its immeasurable billows to our feet, both shelter and food were anything but obtainable.

26th.—This morning the weather clearing I continued my journey. Ascending the precipitous hill near the bottom of which we last night bivouacked, we gained a wood, where I noticed a small tree of the *Melicytus* genus, with very long lanceolate leaves (7), apparently a new species; this plant has very much the appearance of *M. ramiflorus*, Forst., but differs from that species in the shape and length of its leaves, some of which measured 10 inches, and in its taller manner of growth, averaging from 12—18 feet in height. On the summit of the hill I gathered a specimen of the foliage of a very narrow-leaved *Veronica* (8), but could not find a plant any where in flower. The view from the rocky summit of this eminence was very imposing. I noticed a tall plant of the order *Compositæ* (31), probably a *Senecio*, which was new to me; it grew to the height of 3—4 feet among the young *Leptospermum*. Passing on, over the clayey hills, I gathered specimens of a fine *Monocotyledonous* plant (50), which I had not before observed; it flourished luxuriantly in this locality. Here, also, my new species of *Phormium* (*P. Forsterianum*) was very plentiful. At a short distance further on, I found a handsome *Pimelea* (32) in flower, a shrub of 2-3 feet in height, possibly *P. Gnidia*, Vahl. of this fine plant I took several specimens, although I hardly knew how to preserve them from want of paper. Descending the hill through a slatey defile to the coast, I was rewarded with an elegant little monopetalous-flowered plant (9), a new species of *Plantago* (11), and a species of *Mnium* (40): this last may prove to be *M. biflorum*, Forst.; these were all plentiful by the side of a little stream. I much wished to spend an hour at this place, but Rangitukia, the village where we intended halting for the night, and where we were to obtain a supply of food, was yet at a distance; the day, too, was rapidly passing away; so, with a sigh, which only Botanists know, I was obliged to proceed. The long stony beach was very tedious; we passed it, however, and turned again inland, up the valley of Waiapu. Our route now lay in the bed of the river at present dry, but in winter,

judging from the appearance of the vegetation and stones about me, a mighty torrent. I noticed young trees of the *Edwardsia* genus very plentiful here, but whether a different species from the two present known ones, I could not determine. *A. Carmichaelia*, too, was very common, which appeared to me to differ considerably in habit from *C. australis*, in not being rigid like that plant, its branches being considerably more filiform and drooping; like the preceding, however, it was not in flower, and I could not ascertain whether it was a new species; notwithstanding, I took away a specimen for examination (7β).* I have subsequently received some seeds from a friend residing in this locality, which from his description appear to be those of this plant. A shrub of the order *Compositæ*, and which I believed to be identical with *Cassinia leptophylla*, was also abundant here; of this also I obtained specimens for investigation (34). Reaching Rangitukia, we were heartily welcomed by the natives, who are here very numerous. At this village I remained a few days, but had not leisure to move out to look after a single specimen. In fact, I had scarcely time to eat or rest.

29th.—This morning I left this hospitable village, and proceeded (as before) inland, up the dry bed of the river; the sun hot and insects very numerous, of which I gained several interesting, and doubtless, new species. I discovered on the banks of the river a new and peculiar species of *Rubus*; a shrub almost leafless, with only here and there a small leaf or two very sparingly scattered at the extremities of its youngest branches. It was about five feet high; branches very long, filiform, and much entangled; in colour a beautiful light green, thickly studded with orange-coloured prickles (51). The natives, who were with me, assured me that it bore red fruit in the winter season which the birds fed on. I much regretted that I could not detect any vestige of its flowers or fruit. Here I also found, (out of flower), two small *cæspitose* growing plants of the order *Compositæ*; of one of which,

* See Packet 7β.

(29) called by the natives, Papapa, I found old flowers; of the other (30) I was not so fortunate. I also observed a small-leaved *Epilobium* (27), and another, a very beautiful species, (10a) without however either flowers or fruit. I subsequently found this last-mentioned species growing in rich profusion on the banks of the river Wirinaki far away in the interior, (vide sp. no. 188). Passing through the woods on the banks of the river, I observed some young trees with compound leaves (14), which were new to me; I could not then detect their parents, but I think I was fortunate enough to find them afterwards on the mountains in the interior, (vide, sp. No. 131). We soon arrived at Wakawitiva, one of the largest native towns in New Zealand, where we remained a day or two.

Dec. 1st.—Early this morning we left Wakawitiva, the principal village of the Ngatiporou tribe.—I had proceeded but a few yards ere I discovered a very pretty procumbent *Ranunculus*, a new species (15) which grew here among the grass. At some distance further was a very fine grass (52) which flourished here, and another with black joints (53). In a grassy plain, a little beyond the river grew a curious little *Lobelia* (28), which I have reason to believe identical with one formerly discovered by me on the sea-shore of the East coast, and sent to you in 1841. Here also that pretty little plant, *Micromaria Cunninghamii*, Benth., was very plentiful (10). Proceeding hence towards the sea, through a long, irregular, and stony water-course, (which road I chose in hopes of meeting with something new), I found several mosses, (vide packet, No. 298). Emerging from the forest's gloom we descended to the beach, over which we continued our course for a few miles, until we arrived at a small village called Wareponga. Here I saw a species of *Clematis* which appeared new; leaves were ternate, very coriaceous and glabrous, with the lower half only of each leaf greatly crenate. I fear that I must somehow have mislaid my specimens of this plant as I cannot find them; the fruit, however, I fortunately possess (54). On the rocks, in this locality, I noticed a species of *Patella*

which sank the base of its shell considerably into the face of the rock on which it had fixed its residence; these rocks, as before, were composed of indurated clay.

2nd.—It rained incessantly during the night; the morning however was fine, and I continued my journey. Our route, at first, lay along the beaches; but after travelling about four miles we arrived at Waipiro, a small village, where we breakfasted, and directed our course inland over high and craggy hills. At a little distance beyond Tapatahi, (a romantically situated village perched high on a precipitous crag), I found a new species of *Fagus*, ? with small oval leaves (36); a timber-tree from 30—60 feet in height. I had observed the tree in this very spot when passing here a few years ago; and had been looking out for it for several days; I did not, however, see a single plant of the genus until I came to the identical place where I had before noticed it. I had some difficulty in getting the natives to climb the trees to get me specimens, which, however, I procured, but not such as I wished. A little further on, by the side of a water-course, in a glen, I obtained two *Epilobiums*, one with large, thin, serrated, subrotund leaves (20), and the other, a smaller plant with oval leaves slightly serrate (20 β). Proceeding onwards, I found a graceful *Convolvulus* with small leaves (37), which I believed to be the same as one, the foliage of which I sent four years ago to my late botanical friend Allan Cunningham, Esq. In descending to the sea, I observed a *Pittosporum* which I supposed to be *P. umbellatum*; still it looked so very fine that I could not refrain from taking a specimen (41); which since my return I have ascertained to be a distinct species; its place will, I think, be found between *P. crassifolium* and *P. umbellatum*. I noticed here, while resting on the turf, the great prevalence of smut (*Uredo*, sp.) on the common indigenous grasses; and also the extreme profusion of *Edwardsia microphylla* which every where abounded. At the north parts of the island this tree is by no means common, nor do I recollect ever having seen a single plant in any other locality than *close* by the sides of rivers, and on

headlands near the sea. A large species of *Ranunculus* (19) also grew in this spot. Towards evening I brought up in heavy rain at Te Ariuru, a large village in Tokomaru Bay; a spot which by the Naturalist will ever be contemplated with the most pleasant association of feeling, for here it was that Sir Joseph Banks and Dr. Solander first botanized in October, 1769. This bay was called Tegadoo by Cook. At this village I was obliged to remain a day or two, in consequence of the very violent gale of wind and rain which commenced on the night of my arrival, and completely imprisoned me within the canvass walls of my tent. On the ebbing, however, of the tide, I ventured to the rocks just below, and was rewarded with an elegant species of *Patella*, which being quite new to me and believing it to be undescribed, I have named *P. Solandri*: sending you, my dear Sir William, a specimen and enclosing a description.

4th.—Early this morning I recommenced my journey. Our route being by the sea-side, the sea in many places laving the bases of the clayey cliffs, together with the extreme wetness and slipperiness of almost every thing from the late heavy rains made our walk very unpleasant. At Motukaroro, the S.E. headland of Tokomaru Bay, the huge bones of a large whale lay bleaching on the strand. Proceeding hence, about 3 P.M., we passed Waihirare, a beautiful waterfall which fell down a perpendicular sandstone cliff; the face of which, covered with Mosses and Ferns, appeared more than ordinarily lovely in this desolate and otherwise barren spot. I took a hasty glance at the vegetation in hopes of somewhat new, but could not discover any thing. Here on the rocks I gained another species of *Patella*, which differed much from those I had hitherto seen. At 5, P.M., we reached Anaura, a small village where we were very glad indeed to halt for our march this day had been most fatiguing. I observed, in the houses of the natives at this place, a quantity of a thick succulent species of *Fucus* hung up to dry which they informed me was used as

an article of food, mixing it with the expressed juice of the fruit of *Coriaria sarmentosa* to give it consistency: this *Fucus* they call Rimurapa.

6th.—Leaving Anaura and striking inland (in order to visit some natives residing on the banks of the River Uawa), we ascended some steep hills, on the summits of which I noticed several fine plants of *Trophis*, (*T. opaca* ? *Sol.*?) none, however, possessing either flowers or fruit. In a swamp near by I obtained an *Epilobium* (21), which was new to me; and in a wood a little further on I gathered specimens of several shrubs, or young trees (35), but unfortunately could not obtain any either in flower or fruit. Here a very graceful species of *Metrosideros*, with ovate-acuminate leaves (22), hung pendent from the trees; and another species in flower (13), perhaps one of those described by Cunningham. In the shady recesses of this wood I discovered a handsome species of *Polypodium* [*P. sylvaticum*, *n. sp.*, W. C.] (55), together with an elegant *Davallia* [*D. Novæ Zelandiæ*, *n. sp.*, W. C.] (56), the only *Davallia* hitherto found in these islands. *Polypodium tenellum* (57), here adhering to the trees, apparently varied, in the shortness of its pinnæ, &c., from the specimens I had noticed in the north parts of the island. An *Epilobium* (23), with very pubescent leaves and peduncles, which grew hereabouts in grassy places, I also secured. This plant as well as the former (No. 21) grew high from 12 — 30 inches. Arriving at the banks of the Uawa, at present a muddy rapid stream, swollen greatly through the late rains, I noticed a *Lobelia* (58) growing plentifully, probably *L. angulata*, Forst. After some little time spent in fording the stream (on the opposite bank of which *Erpetion spathulatum*, Don, was plentiful, but not in flower), we continued our journey until we arrived at Mangatuna, a small village, where, at the very pressing invitation of the chief we consented to remain for the night. In a wood close by I found an *Orchis* (16), the leaf of which I had often seen at the northward; but though I had frequently sought its flower, I had never been fortunate enough

to obtain it. The flowering season of this, too, unfortunately was long past; I brought away, however, the capsule for examination. The next morning we left this little village and, recrossing the Uawa, proceeded over the alluvial plains which form its banks towards the sea. In this morning journey I obtained two species of *Epilobium*; one (12) with large ovate leaves, adpressed on the stalk; the other (12 a) with long lanceolate leaves. I also got specimens of a pretty little decumbent plant (42) in flower and fruit. At 2 P.M., we reached Hinuroro, a large village on the sea-shore at the mouth of the Uawa River. This bay, or rather open roadstead, is the Tolaga Bay (in 38° S.) of our illustrious circumnavigator, Cook. Here his ships were at anchor in October, 1769; here, too, it was that "the first *Knightia excelsa*, Br., was seen, and the first *Areca sapida*, Sol., was cut down for the sake of its top." And here, near the S.E. headland of the bay, Cook dug a well for the supplying of his ships with water; which well is shewn at this day by the natives to the curious "white man" travelling this way.

9th.—We recommenced our journey this morning, crossing the Uawa, at its mouth, in a canoe. Our route, at first, lay inland, thence we turned towards the sea. Descending a high hill near the coast, I was both gratified and rewarded in finding an elegant little *Arthropodium* in flower, quite a new species (18); I only observed the plant in this locality, although I sought it assiduously during the remainder of my journey as I wished more specimens. Close by it grew a very handsome shrubby *Pimelea* (24), which, to me, appeared to be a new species, and distinct from the one numbered 32. Proceeding on, over the long sandy beaches, we were soon overtaken with rain, from which we endeavoured to shelter ourselves under some fine trees of *Corynocarpus laevigata*, Forst., which often grow in clumps near the sea-shore; but the rain continuing, we were obliged to proceed. From some natives whom we met, I obtained a basket of *Haliotis*, the black fish of which my baggage-bearers ate raw, with great zest. On the shells I found a peculiar little

Patella, identical with a species discovered by Dr. Jos. Hooker, at Auckland Island. At four P.M., we arrived at Parinuiotera, the high bluff promontory, commonly known from its appearance at sea, by the not inappropriate though quite unclassical appellation of "Gable-End Foreland." This remarkable headland, not less than 200 feet in perpendicular height, is entirely composed of white indurated clay, on whose face and sides grew not so much as a single moss or lichen, from the continual crumbling down of the clay of which it is composed. Here, in the pelting rain, beneath this towering crag where we could scarcely stand on our feet, owing to the extreme slipperiness of the clayey rocks, we found that the tide had not sufficiently receded to allow of our passing onwards without hazard. As, however, the evening was drawing on, and we had still some distance to travel ere we should meet with either food or shelter, we were necessitated to make the attempt. Scrambling, in some places, on all-fours, like a cat, and upborne by my faithful natives, I rounded this cape, through the breakers, passing under a natural archway in the rocky cliff, a thing of common occurrence, in similar situations, in New Zealand, and reached in safety, though wet, and cold, and hungry, the other side. Continuing my march, I picked up several specimens of *Algæ* which were new to me (59). At six P.M., we arrived at Pakarae, a small village, containing about twelve persons, who, according to their custom, heartily welcomed us although they had not a scrap of food to give us. The old chief kindly pulled up three stakes from the fence of his little city as tent-poles for my tent, for trees there were none in this neighbourhood, and presented me with a dead craw-fish which I was happy enough to obtain, and divide among six of my party, including myself, as a substitute for supper. Next morning we started early, (having procured a basket of sweet potatoes for our breakfast, which were fetched during the night from some distance) travelling, as yesterday, by the sea-side. At two P.M., we halted to roast a few potatoes for our dinner which afforded me an opportunity of straying about a little, after specimens. In

doing so I was fortunate enough to obtain *Euphrasia cuneata* in flower, which was abundant here on the clayey cliffs, and three species of *Compositæ*, two of them quite new to me. I had previously noticed the leaves of one, a curious little plant, in the slatey defile, near Waiapu, where I obtained the small *Plantago* (11), and other plants; the leaves and stalk of this plant (39) were covered with a viscid substance which exuded from its glandular pores. Another (25) grew commonly about the bases and faces of the low clayey and sandy cliffs, and often attained the height of 4 or 5 feet. The third (46), a *Composita*, was found in similar situations and of the same height as the preceding. The peculiar glaucous leaves of this last, so much resembling those found on the flowering stems of many varieties of *Brassica oleracea* greatly attracted my notice. Here, also, procumbent upon the sand, grew a small plant (44), somewhat resembling in habit and general appearance *Tetragonia expansa*, but differing in the fruit, the berries being large, succulent, pimples, and dewy, and filled with a carmine-coloured juice; this juice is used by the natives in writing as a substitute for ink; but like most other simple vegetable dyes is very evanescent; the natives call it *Kokihî*. Here, too, I noticed a *Chenopodium* (38), which, I think, I must have sent you before. A *Linum* (17) which appeared to differ somewhat from *L. monogynum*, at least in size, I also discovered in this locality; with a small, straggling, procumbent plant (48), which at first I supposed to be *Anchusa spathulata*, Rœm.; but Cunningham, I find, describes that species as possessing "*folia ovata obtusa*," which this one has not; to that family, however, it belongs in common with its ally the plant numbered 6, already mentioned. Having hastily gleaned this neighbourhood, we once more struck inland. The little decumbent plant (2), first seen at Warekahika was common here on the sand-hills near the shore. Leaving the sand-hills and proceeding on through a long swamp of *Phormium*, about five P.M., we reached the river at Turanganui in the inner N.W. angle of Poverty Bay, and crossing the river in a canoe made the best of our way

for Kaupapa, a mission station, where the Rev. W. Williams resides; this place we reached by seven P.M., quite tired. The hospitable reception, however, which we received from Mr. Williams went far towards causing us to forget the toils of the journey. As the vessel in which I came to Warekahika had been to this place, one of my first inquiries was after my package of paper, and I was happy to find it safe in Mr. W's keeping.

At Mr. W's I remained for several days, occasionally, when weather and duty permitted itinerating in the neighbourhood in quest of specimens. In the alluvial plains on the banks of the river, grew a plant of the Order *Compositæ* (47), possessing a very elegant coloured imbricated involucre. In the swamps, among *Typha*, I detected a curious little floating plant (33),* which covered the whole surface of the standing water. Here, also, on the banks I procured fine specimens of a spiny shrub, of the order *Rhameæ* (49). I had noticed it when here in 1838, and got living plants, which unfortunately died in my garden at Paihia. Until this time, however, I had neither seen its fruit nor flower; it appears to possess characters indicative of its belonging to the genus *Colletia*, *Brongn.*; perhaps a new species of *Discaria*?† It forms strong dense bushes, 2 to 4 feet in height, and would, doubtless, make an excellent fence; for which purpose I gathered a quantity of its seed, now nearly ripe. The natives give this plant the expressive name of Tumatakuru, *i. e.* literally, Standingface-beater. I also noticed a small linear-leaved *Senecio* (26), common here among the grass which appeared to me to be distinct from any species yet observed. On a hill in the neighbourhood, I procured fine specimens of a species of *Cheilanthes* (60), perhaps *C. tenuifolia*, R. Br., and in a damp wood, at a little distance, a fine and lovely *Moss* (45), which was quite new to me. I felt greatly disap-

* Lemna. [Ed.]

† Decidedly so. [Er.]

pointed, however, in not being so fortunate as to find a single specimen in fruit. In this locality, too, a small *Galium* (43) occurred, which may possibly prove different from the two species noticed by Cunningham. I again observed in this neighbourhood that elegant *Rubus* already mentioned (51), but much in the same state as those previously seen at Waiapu; and I was rather surprised to find the Ngaio (*Myoporum lætum*, Forst.) growing here very commonly as a forest-tree, with a straightness and height unknown in the north part of the island. In the Bay of Islands and adjacent districts, *M. lætum* is an irregular growing shrub, or small tree, only found in the immediate neighbourhood of the sea; there, its wood is so small as not to be of any use, and is not even collected for the purpose of firing; while here, the tree attains the height of 30—35 feet, and is very commonly used by the natives for posts, poles, rafters, &c. I quite satisfied myself, however, of its perfect identity with the northern one.

Dec. 20.—This morning I re-commenced my journey, directing my course for the first time directly into the interior. For some time we proceeded up the valley by the banks of the river over alluvial and grassy plains; and about two P.M., reached the forests at the base of the first high range of hills. Here, growing on the river's bank, was a species of *Compositæ* (84) differing from any I had yet noticed. A species of *Viola* (82) occurred plentifully; but I could not obtain a specimen in flower. In a damp wood I discovered an elegant membranaceous-leaved *Lomaria* (265), [*L. rotundifolia*, n. sp., W. C.,] with fine specimens of another species of the same genus (266) which appeared a variety of the plant formerly sent by me to you, and figured in *Icones Plantarum Tab. CDXXIX* (*L. lanceolata*.) In pools in marshy ground, almost entirely submersed in water, I found a fine aquatic *Ranunculus* (99) with very long petioles. On the clayey hills and generally in dry elevated spots, I obtained specimens of what may probably be species of *Celmisia* (86). I think these will prove two distinct

species, and different kinds of *Anchusa*, or *Myosotis* (81, 91) I also obtained in this locality. Ascending a hill I discovered a plant with copious verticillate inflorescence, and large subrotund leaves, with long succulent petioles (83). Most unfortunately I could not find a specimen possessing either seeds or flowers, although I sought most assiduously for such. It must have flowered very early in the season, as both carpels and peduncles in every specimen were quite withered; some flower-stalks were from 12—20 inches in height.* On a barren hill in this neighbourhood grew a *Lycopodium* (85) which I had not before noticed; together with a few *mosses*, (89, 94, 96). From these heights the prospect is most extensive. Beneath me lay Poverty Bay with its romantic headlands; while far away to the left, Hikurangi (the isolated mountain near Waiapu) hid his venerable head in clouds. The atmosphere, however, was so filled with smoke arising from the fern which was burning furiously to windward, that it was only with difficulty that I discovered a single distant object. We travelled until near sunset, halting for the night by the side of a small stream in a desolate wild, called by the natives, Tapatapauma. Here several species of the genus *Epilobium* flourished luxuriantly, of which I secured specimens, (vide nos. 89, 93, 103, 104, 106, 107, and 109); nos. 105 and 110 may, in all probability, be merely varieties of 103. This last, 103, grew most plentifully in tufts every where on these hills among the fern. The sides of the rivulet were ornamented with fine plants of a *Fagus* (88), which I think will prove distinct from the large-leaved species discovered by me in the more northern parts of the Island; the leaves of *this* species

* Since penning the above I am happy in being enabled to add, that I have obtained fine living specimens of this plant, which have flowered since they came into my possession. Its corolla is monopetalous, labiate, and quinquefid with didynamous stamens, and superior unilocular ovary. It may probably rank in the Order *Cyrtandraccæ*. W.C. (This proves to be the rare *Ourisia macrophylla*, *Hook Ic. Pl. tabs. DXLV, vi.*—Ed.

being rhomboid-ovate, upper half of the leaf serrate or sub-laciniate, much truncate, tridentate, and attenuated at the base, serratures, 11—13, acuminate or mucronate, petioles and whole upper surface of the leaf tomentose; while the leaves of *that* species, (discovered by me at Wangarei, and sent to you in July, 1841), are ovato cordate, serrate nearly to the base, truncate, subtridentate, serratures 15—21, and petioles slightly villous; leaves much larger and broader.

21st. Rising early this morning I resumed my journey—and gaining the summit of the hill before me, I had an extensive view of the interior. Hill rose on hill,—Pelion on Ossa, in continuous succession far as the eye could reach. To the left was Wakapunake, an immense table-topped hill, or rather mountain; while far away in the distance to the right, a peculiarly precipitous mountain cast its bold outline in fine relief into the sky: this, my native guide informed me, was Waikare, to which we were going. Time, however, would not permit a lengthened gaze; so, descending the hill, we proceeded onwards. Here, among the short grass, a pretty little *Ophioglossum* (90) grew, which to me seemed to differ from those already noticed by Cunningham, and I first gathered also that very graceful fern, *Lomaria linearis*, *n. sp.*, W.C. (267), which grew rather abundantly in one spot in those grassy dells. On the dry and barren summit of a high hill, I procured a peculiar little *Compositæ* (97); and shortly after discovered a specimen of *Leptospermum* (95) for examination; which I believe, from its foliage and general appearance, to be a new species. It here grows as a stunted shrub; sometimes, however, reaching 7—10 feet in height. In this neighbourhood I noticed a new and very distinct species of *Coriaria* (100), an elegant procumbent plant with undulated ovate-acuminate leaves. It seldom rises above two feet in height and is mostly found quite prostrate, and very abundant; disputing the possession of the soil with those very common occupiers, *Pteris esculenta* and *Leptospermum scoparium*. Among the fern it has a very peculiar appearance; and, at first sight, might almost be

taken for a gigantic foliaceous *Lichen* overspreading the surface of the ground. I have named this species *C. Kingiana*, (in honour of my much respected friend, Capt. P. P. King, R.N.), and was fortunate in procuring fine specimens in flower and fruit. At Hopekoko, a small stream (where we rested awhile to dine on roasted potatoes) the bed of which at the ford was one flat block of sandstone, I procured a specimen of a pretty little *Restiaceus* plant (264), and also of a *Hydrocotyle* (162). Having feasted with hearty zest on our roast, we proceeded on our journey. We soon arrived at a small cataract, down which the water fell perpendicularly about twenty feet into a deep and dark basin. The only ford at this place was on the very slippery edge of the fall, (composed of a single mass of rock), over which I was obliged to be carried, for I dared not trust my own footing on that perilous and uncertain path, which forcibly reminded me of the bridge to the Mahometan Elysium. As it was, I very nearly fell, through nervous excitement, into the gloomy depth below. At a short distance beyond this stream, and on its banks, I found another small *Lomaria* (268) [*L. deflexa*, *n. sp.*, W.C.], and, in the same locality, a graceful species of *Composita* (98), the leaves of which I had before observed. In a deep swamp through which we had to pass, I found a large-leaved *Epilobium* (102), and on a little hillock in the midst of the swamp, a small *Composita* (142), which may prove but a finer variety of 97 already noticed. Passing onwards I obtained a species of *Galium* (101) and a *Hydrocotyle* (92), which appeared to be new. I also noticed the leaf of an orchideous plant (111) differing from any I had hitherto seen; it was, however, past flowering, so I was obliged to be content with a leaf or two as a memento of such a plant. About six P.M., we arrived at the banks of the river Wangaroa, (one of the principal branches of the river Wairoa which disembogues into Hawke's Bay). Here I obtained two canoes from the natives, and paddled down the river about two and a half miles to Te Reinga, the principal village of the district. This river winds round the enormous

hills of Wakapunake at the base of which the village is situated. I had often heard from time to time about this place from the natives, and the abyss-like cataract in its immediate vicinity, and had long cherished a hope of one day visiting it. Tired as I now was, I wished for morning that I might realize my desire, and gain a few more additions to the New Zealand Flora. The roar of the waters during the stillness of the night had much that was soothing as well as solemn in the sound. Morning broke, and, prayers and breakfast over, I entered into a little canoe and paddled about 200 yards to the bed of rock, which, crossing the river, dams up the water and causes the fall. This cataract, from its situation, is exceedingly romantic; the most so, I think, of any I have yet seen in New Zealand. The bed of rock, or rather deposit of indurated clay, sand and mud, of a very white colour, which here obstructs the progress of the river, (and through a narrow hollow in which the water rushes with fearful velocity) is filled with marine shells in a fossil state, although at a considerable distance from the sea and at a very great height above its level. This bed of white rock is large, being not less than 200 feet in width, and, when the river is swollen by the winter's rains, surrounded as it is by high and densely wooded hills, the fall must present a very imposing appearance. I gained several specimens of shells, Uni-Bi- and Multivalve by digging them out of the rock with my hatchet. Among them were specimens of the genera *Terebratula* (*Terebratula Tayloriana*, n. sp.), *Voluta*, *Pecten*, *Lepas*, and others, at present unknown to me. The waters fell from rock to rock three several times, ere they were swallowed up in the dark eddying gulph below. The deep gloom of the river in the gorge beneath, the different hues of the dense masses of foliage on either side, the sunbeams peering downwards through the tops of the trees, the enormous bed of rock above, white as snow, with the natives who accompanied me perched here and there upon the same, and the little village in the back-ground, contributed to give the whole an enchanting effect. In the height only of the fall was I

disappointed. I attempted a hurried sketch, but could not do the scene before me justice. In fact, I had too many things upon my hands at once, consequently I did nothing well. I wished, afterwards, when it was too late, that I had remained a day at this place, instead of pressing on, post-haste, in the manner I did. I just glanced at the vegetation here, and obtained two specimens of white-flowered *Gnaphalium*, (80, 130) which I had not before seen. Returning to the village, and obtaining, though with great difficulty, guides and baggage-bearers, we again commenced our journey. Paddling up another branch of the river, named Ruakituri, for nearly a mile, we landed on the left bank. The sun was intensely powerful, not a zephyr playing, nor a cloud in the air, nor a tree which could afford us a shade anywhere at hand. Through unfrequented paths, (if paths such could be termed) up and down steep hills overgrown with the young fern, (*Pt. escul.*) which at this season is peculiarly disagreeable from the clouds of fine yellow dust with which it is loaded, and which, inhaled at every breath causes you incessantly to sneeze, we travelled until three P.M. many times halting by the way. Having roasted a few potatoes, on which we dined, I endeavoured to cheer my companions in travel, but to little purpose. We however recommenced our journey, and continued our march, through want of water, until after sunset. Fortunately I succeeded in finding some, by the side of which, in the wilderness we encamped; all too fatigued to care much about anything save *rest*.

Oh! how often might I have exclaimed this day with the poet:—

“ All-conquering heat, oh intermit thy wrath !
 And on my throbbing temples potent thus
 Beam not so fierce !—————

—————In vain I sigh,
 And restless turn, and look around for night ;
 Night is far off, and *hotter* hours approach.”

I gained nothing new in the whole of this melting day's

horrid march; fern, fern, nothing but dry, dusty fern all around! I gathered, somewhere, in the course of the day a diseased branch of *Haxtonia furfuracea* (127) which was curiously distorted; probably caused by the punctures of insects. I have often noticed such deformities in various plants, but, as far as I recollect, I never saw it so regular or so large before. One river, the bed of which we descended into and crossed, ran at the depth of from 30 to 80 feet below the surface of the soil on either side.

23d.—At a very early hour we arose, and with stiff and unwilling limbs proceeded onwards. Want of food, in great measure, impelled us forward; as we had yesterday been led to suppose that we should reach the next village by night. After three long hours spent in active exertion, we reached 'Wataroa, a small village where we were heartily welcomed. Descending to this village, I gathered specimens of a *Melicope* (87), in fruit, a small but graceful tree, probably *M. simplex*, A. Cunn. Having breakfasted and rested awhile, we left this village, and continued our march, which, as yesterday, lay over high hills which rose in perpetual succession before us, appearing as if they were without valleys between. The country as we progressed into the interior became more and more barren; a scanty vegetation of stunted *Pteris esculenta*, *Leptospermum scoparium*, *Leucopogon Fraseri* and such plants alone existed on these dry and sterile spots; save where, in the deep glens between the hills, a clump of wood was to be found shewing their heads of foliage here and there like oases in the desert. The soil was dry and dusty, and principally composed of broken pumice. Towards evening, from the crest of one very high hill, we had, in looking back, a splendid though distant prospect of Hawke's Bay, and the rugged and high land bounding the same. On the top of this hill I obtained specimens of a small tree, a species *Weinmannia?* (131;) a few plants of which were here scattered about. My native guides assured me that no person could keep his footing on this elevated spot when the south wind blows; an assertion, which the denuded and bare aspect of

the place, together with the very stunted appearance of the few trees and shrubs on it, seemed fully to corroborate. Bivouacked for the night at 'Wakamarino; a little village on the banks of a small river.

Early the next morning we recommenced our march towards Waikare lake; the old chief of 'Wakamarino accompanying us. An hour's walking brought us to Waikaretaheke, a rapid stream of about 4 feet deep, caused by the exit of the waters of the lake towards the sea, and which here most outrageously tumbled over a long and sloping bed of rock. A bridge of trees, (one of the best-constructed native bridges I had ever seen,) was thrown across the foaming torrent; and, though strongly secured together, it seemed as if every rush of the bounding water would carry it away. A nervous person would not have hazarded himself on such vibrating and precarious footing.

The beauty of the spot rivetted my attention for a few moments, and I almost determined to venture a sketch. I gathered a Moss (128) in this locality; and, a little further on, a fern (269), a species of *Polypodium*, [*P. viscidum n. sp.*, *W. C.*] every frond of which was more or less covered with pappus, downy seeds, and other such light substances, blown by the winds. We soon arrived at the village, situated on a high headland, jutting into the northern side of the lake; the gateway of which was, as is often the case, embellished with a pair of huge and hideous clumsily-carved figures, besmeared with red pigment, and grinning defiance on all comers. The wind now blew so very strong, that it was not possible to cross the lake in such frail canoes as this people had at command; so I was obliged to pitch my tent here, although it was far from easy to find a suitable place, owing to the great unevenness of the ground, its unsheltered situation, and the very high wind. Here I was confined a prisoner until the morning of the 29th, when, the wind lessening, I effected my escape, crossing in safety to the opposite shore. I made, however, the most of my time whilst here, and was amply rewarded with specimens of new plants. First must

be mentioned another beautiful species of *Fagus* (132), with small, broad, adpressed, coriaceous and biserrate leaves which grew plentifully in the immediate vicinity of the lake, and possesses, especially in its young state, most elegant foliage. Unfortunately, however, I could not find a single flowering specimen, although I assiduously sought for such, and hired natives to climb the trees in quest of them; a few capsules of the preceding year were all I could procure. The natives wished me to believe that this tree did not bear fruit every year, asserting that they had also remarked, that when this tree bore fruit, other trees did not! They call it Ta'wai. It grows from 30—50 feet in height, and is not so robust as the large-leaved species. Here also the oval-leaved kind grew abundantly, attaining a considerable size and height. A graceful shrub, of the order *Compositæ* (122), with suborbiculate leaves, and sub-sheathing petioles, I found near the water's edge, but in dry spots; and secured flowering specimens and fruit. This shrub grows in rather a straggling divaricated manner, from 2—3 feet in height. I am much gratified in having a fine young plant now living from seed sown by me on my return from my journey. On the sandstone rocks I found a beautiful minute *Lobelia* (263), a perfect little gem. It was scarce, and grew where it could only have been nourished by the spray and waves of the lake. Here also, among the rocks, was a species of *Plantago* with lanceolate leaves (126), new to me. A fine *Hydrocotyle* (123) I found in the same locality. Just above, on the banks, I gathered specimens in fruit of a peculiar (*Araliaceous?*) tree (125), which was common here: it grew in a straggling manner to the height of 25—30 feet. A large and new species of *Coprosma* (120), a small tree from 10—14 feet high, I also obtained in fructification; with a few fine *Mosses* (118, 156, &c.) Rummaging about among the dry and more elevated rocks, I found a pretty little fern (270), a species of *Asplenium* [*A. Colensoi*, *n. sp. ms.*]; and, on the top of the little promontory on which the village was situated waved a very

handsome *Dicksonia* (271), [*D. lanata*, *n. sp.*, W. C.]. This elegant fern was abundant in this locality; some of the fronds were 24—30 inches in length. Had I not been very anxious to prosecute my journey, I might have spent an agreeable time at this romantic spot; such, however, was not the case. I was among a tribe noted for their reckless ferocity; to whom, secluded as they are in their mountainous retreats, a white man was indeed a stranger. They had scarcely any food for their own use; and although they exerted themselves to the utmost in their endeavour to be hospitable towards me, they could only allow us two scanty meals of roots and herbs per diem.

I obtained from the lake some fine specimens of *Unio*, the only living thing (according to the natives) which inhabited its waters. I supposed the sheet of water to be about six miles in diameter, but could only guess at the probable size, owing to its very irregular shape. The lake is very deep and clear, and the bottom rocky. A peculiar sea-bird, called by the natives, Tété (which often flies irregularly at night, making a noise resembling *tee-tee-tee-tee*, rapidly uttered, whence its name) is sometimes caught here in large numbers. From the natives' account, it would appear that these birds at certain times resort to the tops of the highest and barrenest hills, where the natives assemble and make fires on foggy nights, which fires decoy the birds thither, when they are easily taken with nets. I have often heard this bird at night, but have never seen one. It is, I think, highly probable that it may belong to the genus *Procellaria*.

29th. This morning, the wind lessening, we hazarded a passage, and crossed in safety to the opposite shore. The "everchanging" woodland scenery appeared most lovely, as we, in our little canoe, wound round the bases of these everlasting hills. Here, for the first time, away from the immediate sea-coast, I noticed the littoral species of *Metrosideros* (*M. tomentosa*, A. Cunn.) It grew, however, in similar rocky situations close to the water's edge, and after the same very diffuse manner. Parasitical on its branches, in great abun-

dance, flourished *Loranthus tetrapetalus*, Forst. (112), gorgeously displaying its profusion of scarlet blossoms. On getting into shallow water, I obtained specimens of a graceful *Myriophyllum* (113), which was attached to the bottom of the lake, and grew completely under water to the length of several feet. We landed at the margin of a wood, the trees of which overhung the lake, where, at the pressing request of the natives who lived near I consented to spend the remainder of the day and night. As they did not, however, gather together until very near evening, I had a little time to botanize; and which, I trust, was fully used. It was indeed a lovely spot; that constant humidity, so requisite for the full development of the varied tribes of the Cryptogamic family in all their beauty, was ever present in these umbrageous solitudes. I commenced my search at the water's edge; and first gathered specimens of a peculiar *Rumex*-like herbaceous plant (116) growing within the water. Close by, a small *Myrtaceous* shrub (115), clothed with *Lichens* and *Jungermannia*, attracted my notice; this shrub attained the height of 7 feet. A peculiar little *Jungermannia*-like plant (155) next entered my vasculum. Of *Musci* and *Jungermannia* I gained several specimens, many of which were fine and graceful plants (vide, 157, 158, 159, 175, 176, 164, 151, 152, 147, 135, &c.); among them, I hope some new species will at least be found. A beautiful foliaceous, though small, *Lichen* (150) occurred here on the trunks of living trees having spherical black *soredia* on its *under*-surface which appeared to me quite unique. Another species (172), bearing *scutellæ* on the edge of its *thallus* grew also on these trees. I here obtained five specimens of A. Cunningham's new genus *Ixerba* (114), and in doing so almost dared to hope that I had gained a *second* species from its anthers being *scarcely ovate*, the style *twisted* its larger corymbs, containing 5-10 flowers; its lanceolate leaves, shorter and broader; its much larger size and robust habit attaining the height of 40—50 feet, and being too one of the commonest trees of these woods; in all which it differs from *I. brexioides*,

Cunningham's plant, which, in these particulars, is thus described by him: "*Antheræ* ovatæ acuminatæ. *Stylus* 1, angulatus, continuus, versus apicem attenuatus. *Flores* corymbosi, pedunculis (uncialibus) plerumque trichotomis. *Folia* elongato-lanceolata acuminata, 4-5 uncialia; (5-6½, W.C.) *Arbor* elegans viginti pedalis et infra.—A tree of very rare occurrence." A. C. in Ann. Nat. Hist., vol. iii, p. 250.—I also procured specimens of a new species of *Coprosma* (117), a graceful shrub, 3—6 feet in height, with oblong-lanceolate leaves and a species of *Senecio*?, which appeared new to me (129) with a peculiar plant (121), which I supposed to be a large *Polytrichum*? growing in dry spots; of this, however, I could not find a single specimen exhibiting either flowers or fruit. In this locality, I also gathered specimens of a species of *Solidago* (119), a small shrub, 1—3 feet in height, which, from habit and general appearance, I supposed to be distinct from *S. arborescens*, Forst.; and a fine shrubby *Leptospermum* (177), which may prove a new species. Here, also, I was so very fortunate as to obtain fine specimens of several new species of the beautiful genus *Hymenophyllum*. *H. Franklinianum* (272, n. sp. W.C.) a lovely creeping fern, pendulous on living trees, whose trunks it completely clothes with the exuberance of its fronds. I have done myself the very great pleasure of naming after that kind patroness of science, the Lady of His Excellency Sir John Franklin, &c. &c., Governor of Tasmania, who lately visited these Islands.

H. pulcherrimum, (273, n. sp. W.C.) another beautiful and fine species, is also epiphytal on trees in the darker recesses of the forest. This is one of the largest species yet found in New Zealand, some fronds measuring fifteen inches in length. *H. spathulatum*, (274, n. sp. W.C.) a fine species, is parasitic on trees overhanging the lake. This fern exhibits a very peculiar appearance, from the circumstance of its having a number of black botryoidal masses on the edges of the segments of its fronds. I, at first, supposed I had discovered the type of a new genus; but, on examination with such

means as I had at command, I conclude these masses to be the work of some insect. I noticed this species only to be so ornamented. *H. atrovirens*, (275, n. sp., W.C.) a small dirty-looking species found on wet rocks and stones in low shaded spots, is apparently very near *H. flexuosum*, R. Cunn., differing, however, in its involucre, &c. the involucre in that species being "orbiculate." *H. revolutum*, (276, n. sp. W.C.) a small species, epiphytal on the reclining branches and trunks of trees, in damp and shaded places; in affinity very near *H. Tunbridgense*. The deeply lacinated margins of the segments of its frond, will, however, be found constantly revolute. After all it may prove but a variety of *H. Tunbridgense*, of which English species I have not an accurate description. The elegant little *H. semibivalve* (277) grew plentifully here on fallen and reclining trees. A handsome species of *Polypodium* (278) apparently a variety of *P. Grammitidis*, R. Br. but having its lobes deeply incised and sub-pinnatifid; and an elegant species of *Grammitis*, (279, *G. ciliata*, n. sp. W.C.) I also obtained in this locality. Both these ferns are epiphytal on living trees. *G. ciliata* has close affinity with *G. australis*, R. Br. from which, however, it differs in its being a much smaller plant, in having its *sori* more prominent and crowded, and in being villous underneath and beautifully ciliated at the margin. Several charming mosses (280) too, I gained during my very short stay here, among which I was very much pleased to find in fruit the very beautiful one whose fronds I had before detected in a wood near Turanga, (vide sp. No. 45). The mosses (280) must speak for themselves; I hope, however, that some new species may be found among them.

The next morning I recommenced my journey; experiencing no little difficulty in the obtaining of a guide over the mountains, in which service I was obliged to enlist all my persuasive powers. We commenced ascending from the shores of the lake, through dense woods chiefly composed of *Ixerba* and *Fagus*. Having gained the summit of the range we found travelling easy; for, in these forests where the broad-

leaved *Fagus* (No. 88) is the principal tree, there is but little underwood; indeed, plants seem as if they did not like the shade of these trees. One of the first things that attracted my attention this morning was a peculiar little plant (163) with succulent white berries, growing here and there at the foot of large trees, wherever the light decaying vegetable mould was deepest. I sought assiduously for perfect specimens, and was at length rewarded with them in flower and fruit: I have not met with any thing like it in New Zealand. A pretty shrub with an elegant leaf (171) abounded here; as did another shrub (165) possessing the habit of *Myrsine*, but neither of these could I detect in flower nor fruit. A new *Orchideous* plant sent in acid (262) I procured perfect specimens of from the foot of the trees in these woods; it grew, however, singly, and appeared scarce. The natives told us that we might expect rain on these mountains (they having a proverb to the effect that it is never dry in these parts) and so indeed it came to pass.

After we had proceeded for about two hours it began to pour down in torrents; no shelter was at hand, so we were obliged to continue on in the cold and pelting rain. I much regretted the state of the weather, as I had every reason to expect new and rare plants in these elevated regions. The trees and shrubs large and small, were all beautifully festooned and draperied with *Jungermannia* and *Musci*, as if wound by fairy fingers, evidencing the eternal humidity of these forests. The family of *Filices*, too, presented the most lovely spectacle this day I ever witnessed. In these deeply shaded recesses, my enchanting *Todea superba* (281) and graceful *Lomaria rotundifolia* (265 ante,) flourished in perfection; the densely crowded and dark green fronds of the former contrasting so beautifully with the light-coloured and elegant membranaceous ones of the latter; their fronds grouped in ever-living circles of green, from 5 to 6 feet in diameter; many single fronds of either fern measuring upwards of 3 feet in length. With them grew two species of *Aspidium*; one, *A. pulcherrimum*, (282, n. sp., W. C.), a truly fine plant,

is one of the most lovely ferns in New Zealand, many of its gracefully flaccid fronds measuring upwards of 4 feet in length. The other, *A. Waikareense* (283, n. sp., W. C.), is also handsome though smaller and much more rigid in its growth and habit than the preceding, having the lower divisions of its *pinnæ*, which are crowded, subimbricated on its *rachis*. Another new species of *Lomaria* (284, *L. latifolia*, W. C.), was growing in these spots; in affinity this fern comes very near *L. procera*, Spreng., from which, however, its solitary habit, broader *pinnæ*, which are fewer in number and deeply serrated and not decreasing in size downwards, sufficiently point out the distinction. I gazed entranced, notwithstanding the warring of the elements, upon these beautiful productions of nature, and wished much to secure good specimens. It was necessary, however, under existing circumstances, to content myself with a couple of samples of each species, and these, too, hastily gathered and put up dripping wet, to the very great astonishment of the natives. Proceeding on, I found, in more open situations, a pretty little iridaceous plant (154), perhaps *Libertia micrantha*, A. Cunn., (or a new species) growing most profusely, reminding me in the distance of the "daisied meads" of my father-land. Ascending yet higher in pelting rain, I discovered a handsome species of *Viola* (160), bearing a large white blossom with a fragrant smell. I hastily removed this interesting plant from its mossy bed to the bosom of my cloak, now nearly as wet as the bank where the flower originally grew. Along with it was a small *Epilobium* (161), in leaf only with axillary inflorescence. In this neighbourhood, I obtained specimens of several plants of the *Coprosma* genus, which appeared new to me (167, 168, 169, 170); all small shrubs, from 3 to 5 feet in height. A small divaricated shrub without fruit, but apparently a *Myrsine* (179), I also took a memento of. A fine *Lycopodium* (173) with terminal spikes of fructification growing pendulous on trees attracted my attention; in habit and growth this plant much resembles *L. Flagellaria*, Hook., of which it may possibly be a variety.

A *Restiaceous* plant (153), a species rather of *Luzula*, perhaps a variety of No. 264 already noticed, I gathered in this locality. A small tree with black bark, which appeared to me to be a species of *Laurus*, was also obtained in flower (197). This plant reminded me of a shrub which I discovered at Wairua in the northern parts of the island in 1840; specimens of which (numbered 14) were sent you in 1841; they both evidently belong to the same genus. A very delicate white *Lichen* (196) which here and there grew on the trees, as well as a fine terrestrial white *Moss*, (202) without fructification, I next procured. The densely wooded mountains over which we this day passed, were chiefly composed of sandstone which shewed itself in various stages of decomposition in the very many slips in their sides. In descending one of these gorges, I found a *Pteris* (285), *P. montana*, n. sp., W. C. a small glaucous, glabrous species, in affinity very near *P. Brunoniana*, Endl., of which it may possibly prove, on further examination, to be a variety. A smaller variety of *Polypodium sylvaticum* (No. 55, already noticed), I also obtained in this neighbourhood. After a silent and persevering march of some hours through the very cold rain, for in threading our tortuous way through the endless mazes of pathless forests in such weather as this, we found it impossible to keep ourselves warm, we began to shiver with cold, and determined on halting at the first sheltered spot. By the side of a rivulet at the bottom of a hill, we found a deserted hovel, which, though open on all sides, offered us a better shelter from the pitiless showers than we had expected to meet with in such a place. We repaired our hut with tufts of the different *Carices* that grew hard by, and pitched my tent; then throwing off our dripping garments and kindling a fire, we endeavoured to make ourselves as comfortable as possible in our present circumstances. Fortunately we had a few potatoes with us, which, not knowing how long this weather might continue, we divided *una voce* into three small portions, so as to afford us two meals for the morrow. The rain continuing to descend in torrents, swelled our little

brook to a large stream, causing me to fear that the narrow level spot on its banks, on which we were now encamped, would soon be overflowed.

Dec. 31st.—Daybreak this morning found us much the same as daylight last evening left us,—with water on every side. The past night was one not likely to be soon forgotten. The heavy rain and rattling hail which unceasingly poured down,—the vivid lightnings and hollow-sounding thunder reverberating awfully in never-ending echoes among the hills,—the angry winds which furiously rushed in fitful roaring blasts through the ancient forests, rocking, and cracking, and lashing the monarchs of centuries as so many saplings of a year, stripping their leafy honours, and breaking off their branches, hurled them to the earth,—the hooting of owls, and shrieking of parrots, which flew affrightedly about seeking shelter,—all united to declare, in a voice too plain to be misunderstood, the great commotion Nature was undergoing;—fit knell for the departing year. The morning was most gloomy; the rain still incessant and our cold, wet, lonely, and all but starving situation, was any thing but pleasant; when, as if we wanted somewhat more to taste of the very *acmé* of cheerlessness, our only guide deserted us, returning to Waikare! He had intimated as much last evening, and I had kept a watch over him; he easily, however, found an opportunity of leaving us. My other natives were all from distant parts of the island, and knew no more of these districts than myself. To go back to Waikare, was, from there being no proper path, not a whit easier journey than to go forward to the next village. The weather, however, confined us to our rude shelter, under which I, clad in light summer clothing, shiveringly sat, holding an old umbrella over my head. Towards evening the rain moderated, and I ventured to walk a few yards from the door of my tent. On the banks of the stream I obtained a fine specimen of a small but handsome shrub of the *Composita* family (148), probably belonging to the genus *Haxtonia*, or *Brachyglottis*. Here also I gathered magnifi-

cent specimens of my new *Viola*, which luxuriated on the mossy rocks on the banks of the stream. A *Lobelia*, too, (260) I also secured growing with the latter, which may prove to be only a variety of *L. angulata*, possessing, however, larger flowers, and smaller leaves. A *Gnaphalium* (261), probably identical with 130, already noticed, and an *Epilobium* (259) came next ; and a *Pittosporum* (134), perhaps *P. tenuifolium* in fruit. At night, rain still persevering, I called the natives to council, to consider what we had better in our exigency do ; so we unanimously agreed, "rain or shine," to proceed on our journey to-morrow morning, trusting somehow or other to find our way ; a determination to which we were compelled through hunger, having consumed our last scanty meal.

Jan. 1st, 1842.—Early this morning the rain ceased ; but as heavy clouds still shrouded the face of heaven, it was just as wet from the dripping trees and rank foliage around us in these deep valleys and dark forests, as if it were still raining. We commenced our wet and cold march *sans* breakfast with perhaps a more hearty will than if we had fared sumptuously ; our route lay by the banks of the river, which we crossed and recrossed repeatedly, making our walk very unpleasant. Here in these deep secluded glens I discovered a new species of *Lomaria* (286), *L. heterophylla*, W. C. not of Desvaux, (*L. Colensoi*, Hook. fil. in Ic. Pl., Tab. DCXXVII, VIII), some of whose immense pinnatifid fronds measured near 3 feet in length. Here also I discovered a large climbing Fern, a peculiar species of *Aspidium* (287), *A. Cunninghamianum*, W. C., differing much from all other species of *Aspidium* that have come under my notice. This Fern is succulent, coriaceous, and glabrous, and is the largest Fern found climbing trees yet discovered in New Zealand ; some of the fronds measured, including stipes, near 3 feet in length. I dedicated this plant in memory of that very zealous botanist, my much lamented friend, the late Allan Cunningham, Esq. In this locality I also found epiphytal on reclining trees, a new species of *Hymenophyllum* (288), *H. villosum*, W. C. A

beautiful long-fronded and pendulous Moss (174) grew solitarily in the sides of ravines in these damp woods. I could, however, only detect a single specimen bearing capsules; two were on it, one of which, with some barren fronds, I send you. I gathered specimens of other Mosses (182, 183) which appeared to be scarce, and of a very large-leaved *Jungermannia* (186), and of a small decumbent plant without flower or fruit (180).

About noon, to our very great surprise, our runaway guide overtook us, bearing a large basket of fine potatoes on his shoulders, for which he had purposely gone back all the way to Waikare, in that heavy rain, in order that we might not suffer from hunger. I could not but applaud the man's kind consideration, whilst I disapproved of his leaving us in the manner he did, without saying a syllable as to the object of his returning. This, however, is quite in keeping with the national character of the New Zealander. Prompted incessantly by an ever-restless and indomitably independent principle of doing some capricious work of supererogation, their defined duties are left unperformed, they often sadly try to the utmost the patience of those by whom they are employed. In their own language they have a word (*pokanoa*), which, while it fully conveys the force and meaning of the foregoing remark, is, from the frequency of the occurrence of such behaviour, in daily if not hourly use by every native of New Zealand. Nor is this capricious way of acting confined to those who are still in their novitiate; on the contrary, those who may have been for years in your employ are equally, if not more prone to such conduct. At two P.M., we arrived at Ruatahuna, a small village, surrounded on all sides by dense forests, where we were hospitably received. The natives soon cooked us some potatoes, on which we made a very hearty meal.

I remained for three days at this village, during which my whole time was fully occupied with the natives. On the morning of the 4th we again recommenced our journey. Our route, at first, lay over very high and steep hills, clothed

with forests to their summits; which having attained, we descended to a deep valley, where ran a rapid brawling stream, from 2 to 3 feet in depth. By the banks of this river, among gigantic ferns and underwood, decaying logs and fallen trees, we travelled on, every now and then crossing the stream, which we certainly did this day more than fifty times. This was by no means pleasant, but there was no alternative. I observed in one place where we crossed the river, a small plant, under water, growing thickly in its gravelly bed, where the stream was deep and rapid; I got up a quantity, but could not detect either inflorescence or fruit; from habit and general appearance I believed it to be a species of *Epilobium*; but unfortunately I subsequently lost the specimens thus procured. On the banks of this river, I first obtained a fine arborescent *Dicksonia* (289), *D. fibrosa*, n. sp., W. C. This fern, in its native forests, attains a height of 18 feet. Its large and spreading living fronds measure from 6 to 9 feet in length; these, however, are generally few in number and deciduous. In affinity, it is near *D. squarrosa*, Sw., from which species, however, it may readily be distinguished, even at a distance, by its very bulky caudex, composed of thick layers of fibres, resembling, at first sight, the fibrous interior of the husk of the coconut. Some trees I noticed possessing a trunk from 14 to 16 inches in diameter. The natives separate this fibrous epidermis into thick slices, which they use for many purposes in the construction of their houses and stores, being easier cut by them, with their scanty means, than wood. A piece as large as a small plank may readily be obtained. They find it, also, to be much more effectual than timber, in excluding rats and mice, as these animals cannot gnaw through this dry and fibrous substance with the facility which they can through wood. In this locality I also found a species of *Myrtus* (194), a small tree, which I believe to be identical with one discovered on the banks of the River Wairua in 1841, and numbered 23 in the case of specimens sent you in that year, bearing orange-coloured and edible berries. It also seems to

be a closely allied species to No. 115, already noticed. This graceful shrub, or small tree, grows to the height of 10 or 12 feet. About four P.M., we emerged from the dense woods to a large plain, covered with *Pteris esculenta*, the first plain of fern we had seen for several days. Passing over this plain, I obtained from a boggy watercourse, a small plant, with white flowers (189), a species of *Marchantia* (198), a *Hydrocotyle* (199), and a species of *Hypericum* (200). The latter appeared to me to be very distinct from *H. pusillum*, D.C., in being a much larger plant, of *erect* growth, with oblong calyces, and oblong-ovate, or obovate, undulated and margined leaves; whereas *H. pusillum* is described "caule debile prostrato, foliis ovatis obtusis, calyce lanceolata," &c. We halted this evening at Te Waiiti, a fenced village, situated on the banks of the river at the end of the plain. The next morning we resumed our journey. On ascending the first hill, I found a small plant growing in a rivulet (195), perhaps a variety of 189, already noticed. A little further on splendid specimens of *Lomaria linearis* grew luxuriantly about the margins of woods near the river. Here, also, were several fine plants of *Dicksonia fibrosa*, their trunks grotesquely hewn by the natives into all manner of uncommon shapes in cutting away their fibrous epidermis, for the purposes already mentioned. Discovered another *Lomaria* this morning (290), in ascending the first wooded hill after crossing the river. This species, (*L. deltoides*, n. sp. W. C.) approaches very closely to *L. deflexa* (n. sp. No. 268), already noticed; differing, however, in its habit, manner of growth, size, and in being hairy underneath, and ciliated on the margins of its *pinnae*. In a damp forest I obtained fine specimens of my new *Davallia* (No. 56), already mentioned, some fronds measuring 18 inches in length. I only observed this fern growing in two places in the whole of my journey, and not above half-a-dozen plants in either spot. Ascending the barren and lofty hills before us, I found, near their summits, a species of *Composita* (185), which I had not previously seen. These hills were formed chiefly of broken pumice

and ashes. The sun was intensely hot, and the roads, in several places, worn into deep and hollow gorges, were extremely dry and dusty, our feet, and even our ankles, being often completely buried in the loose and broken pumice through which we had to travel. Gaining the summit of the highest hill, the view was most extensive and striking. Immediately beneath, meandered the *Wirinaki*, a bold brawling river, flowing quickly over its stony bed, and possessing water sufficient to float a moderate sized boat; beyond, rose barren hills of all possible irregular shapes and heights; further still, an extensive plain extended E. and W. as far as the eye could reach; next, a chain of lofty, table-topped hills bounded the range of vision; whilst, here and there, far away in the extreme distance, several high and isolated mountains reared their barren heads above the horizon. On the left appeared Tauwaura, a high mountain in the Taupo district; Paeroa and Kaingaroa, near Rotorua, presented themselves in front; whilst, to the extreme right, Putauaki, the high mountain, near Wakatane, on the east coast, upreared its two-peaked summit to the clouds. Here, notwithstanding the pleasurable height to which my imagination had been raised, whilst engaged in contemplating the magnificence and extent of the prospect before me, it soon sank below its ordinary level, on finding that not a human being dwelt in all that immense tract of country on which my eager gaze then rested! The grass grew, the flowers blossomed, and the river rolled, but not for man—solitude *all!* Even the little birds, few though they were in number, seemed to think with me, for they flew from spray to spray, around and about my path, with their melancholy “twit, twit,” as if wishing to have all they could of the company of a passer-by. Their actions were quite in unison with my feelings, and I could but exclaim, “Oh! Solitude, where are thy charms?” etc.

Descending to the banks of the river *Wirinaki*, I was rewarded with the discovery of a few new plants: among them a linear-leaved *Coprosma* (178), a procumbent and

straggling shrub, in habit and general appearance much like *C. acerosa*, doubtless identical with that species; two species of *Epilobium*, one a very beautiful species (188), which I believe to be the same as one the leaves of which I had previously noticed in the valley of Waiapu, (vide sp. no. 10, &c.), the other with densely linear and serrated leaves (187); different kinds of *Gramineæ* (184, 190, 201, this last a variety, perhaps, of number 53); a small shrubby *Dracophyllum* (192) and a *Carmichaelia* (193). Possibly this *Carmichaelia* may prove identical with that (no. 7 β .) observed without flowers or fruit in Waiapu valley. Crossing the water I obtained a very pretty little *Polygonum* (146), some plants of which were so small as not to exceed an inch in height, although bearing both flower and fruit. Proceeding over the long plain I had seen from the hill-tops, and which was exceedingly barren, I got specimens of some small *Restiaceus?* plants (181, 191), which, with *Leucopogon Fraseri* and the small *Polygonum* already noticed, comprized the vegetation of this very desolate place. Night was fast closing around us, and we quickened our pace, although excessively tired, in hopes of finding a few sticks wherewith to kindle a fire, for none at present appeared within the range of our eye-sight. After some time we met with some small dry scrub (*Leptospermum scoparium*) on the bank of the river, where we bivouacked for the night. At a very early hour the next morning we recommenced our journey. Crossing the rapid river, Rangitaiki, at the end of the plain, (which at the fording-place we found to be breast-deep, and which we were obliged to cross in an oblique direction, that we might not be swept down by its strong current), we travelled over a country more sterile, if possible, than that of yesterday. An interminable succession of dry and barren hills of lava, pumice, ashes, and other volcanic matter, where the stunted vegetation was all but quite burnt up with the long drought, afforded a very scanty gleaning to the Botanist. I was rewarded, however, with a few new plants in this day's toilsome march. A fine species of erect *Cardamine* (138) was

found at Mangamako, a little wood through which we passed; a very graceful *Dracophyllum* (145), a small shrub, from two to four feet in height, grew sparingly here in the little dells between the hills; and in the same locality I obtained a small species of *Gnaphalium* (137 a, &c.), which appeared to differ from any yet noticed. Here also I procured specimens of two curious little plants of *Compositæ* (140, 141) which sprung up in dense patches on the dry and broken pumice. Towards evening, we arrived in the neighbourhood of the Rotorua Lakes. When traversing a deep bog, I discovered a very peculiar little leafless monopetalous-flowered plant, growing in the mud (143). On nearing Rangiwakaaitu, the first and southernmost lake, I was much gratified with the very lovely appearance of a truly beautiful species of *Leptospermum* (144), a small tree from 15 to 25 feet in height, which flourished here, growing in clumps and rows as if artificially planted. These trees were literally laden with a profusion of beautiful blossom; and, from there being no underwood about them, not so much as a tuft of grass, they looked the more charming and conspicuous. Another circumstance struck me as singular: no small or young trees of the species could be met with; all were old trees of many years' growth. I say old, because the *Leptospermum* is a slow growing plant. Beneath them I saw a curious woolly moss (139,) which, though sought for assiduously, I could not detect bearing any fructification.

We had intended to make Tarawera (the second lake where some natives resided) our halting-place for this night; but, although we had nothing to eat, we were so excessively tired as to bring up on the white-gravelled shores of the placid Rangiwakaaitu. I offered my natives the choice of staying supperless where we were, or proceeding to Tarawera distant about three miles, and there getting food; fatigue, however, overcame hunger and they chose the latter. The whole face of the country in the neighbourhood of the lake was overspread with massy blocks of lava, scattered in every direction, many of which were vitrified on the surface.

The ground rose gently from the lake, which appeared to occupy a deep hollow, and I could but venture to suppose that this might perhaps have been the crater of that volcano, which, in some bygone age, inundated the adjacent country with showers of pumice and ashes.

Jan. 7th.—Early this morning we arose, feverish, stiff, and sore, from our gravelly couch to recommence our march. We soon came within sight of the place where the hot springs were situated, from which the steam and sulphureous vapours continually ascended in dense white clouds. The air this morning was cool and bracing. After travelling about an hour and a half we arrived most ravenously hungry at Tarawera lake. Here, at a little village on its banks, we procured some potatoes, on which we breakfasted with a hearty zest. At this place were several small hot springs, which flowed out of the earth near the edge of the lake; the water of some being hotter than the hand could bear. Just within the lake the water was warm, a little further on it was luke warm, and, further still, cold; so that these natives have baths of every requisite degree of heat always ready without any trouble whatever. The water of the lake I suppose to be specifically heavier than the sulphuretted hot waters which flowed into it; as, whenever the natives of the village wished to drink, I observed them to go into the lake and dashing the uppermost water aside with their feet quickly take up some from beneath; which, they said, was good and cold. The natives of the village informed me that at a spring on a hill at a little distance, the water was quite hot enough for the purpose of cooking, for which they often used it. Sulphur, too, abounded there, and was frequently “thrown up” out of the earth, from a place whence steam and smoke ever ascended. My curiosity being excited, while breakfast was getting ready, I set off with a native of the village as a guide to the boiling spring; but after gaining one hill and not perceiving any sign of the same, and being almost exhausted from want of food, hunger overcame curiosity and I returned to the village. I have several times been surprised at the great

carelessness which I have exhibited towards rare natural productions, when either over-fatigued or ravenously hungry; at such times botanical, geological and other specimens, which I had eagerly and with much pleasure collected and carefully carried for many a weary mile, have become quite a burden, and have been sometimes one by one abandoned; to be, however, invariably regretted afterwards. Breakfast ended, we, accompanied by the chief of the village, paddled to near the opposite extremity of the lake. This sheet of water is about three and a half miles in length, and from one to two miles in breadth; surrounded on all sides by barren hills and very deep. Landing and walking about two furlongs, we came to Kareka, another little lake much smaller than the preceding. Here we were obliged to wait some time before we could get a canoe, which being obtained, we paddled about a mile to the opposite end, landed and continued our journey. Gaining the top of a high hill we had a fine prospect of the principal lake of Rotorua: a noble sheet of water about six miles in diameter with a very picturesque island nearly in the midst. An easy journey of a few miles from this place brought us to Te Ngae, the mission station on the east side of the lake, where the hospitable reception I received from Mr. and Mrs. Chapman, quickly made me forget all hardships. I gained not a single botanical specimen of anything new this day.

At Te Ngae I remained a few days, during which time I visited Ohinemutu, a large and fenced town on the bank of the lake, celebrated for its boiling springs. The largest spring at this place was boiling most furiously, throwing out many gallons of water a minute, which rolled away steaming and smoking into the lake, a second Phlegethon! In the smaller springs, of which there were several, the natives cook their food, merely tying it up in a rude basket, of the leaves of *Phormium tenax*, woven together, and placing it in the boiling water, where it is soon dressed. For this purpose, and for that of bathing, they have made a number of holes through the crust or scorïæ, on which this village is

principally built ; so that it may truly be said, that this people dwell in houses erected over subterranean fires. The sulphureous stench which abounded here was almost insupportable. The blade of a knife, immersed for a short period in some of these waters, soon becomes, as it were, superficially bronzed. Accidents not unfrequently happen to children, and to dogs and pigs brought from a distance. The quadrupeds, however, of the place appear instinctively to be well aware of the heat of these streams, and shun them accordingly. The natives who live in this neighbourhood are, when travelling, easily recognized as belonging to this district, in consequence of their front teeth decaying at an early age, contrary to those of other New Zealanders : this is supposed to be caused by the sulphur with which these springs are impregnated, being deposited on the surface of their food in cooking, which consisting chiefly of roots, is mostly bitten into morsels with their front teeth. Here, on the very edge of the large boiling spring, several plants flourished exceedingly, particularly *Pteris Brunoniana*, Endl.

I brought away specimens of two plants which grew on the brink of the boiling water, and which seemed new ; one, a species of *Carex* (136), the other, a plant of the order *Compositæ* (137), probably a *Myriogyne*, differing however from *M. minuta*, Less., the leaves of which are much smaller and sessile. I regretted not having a thermometer by which I might ascertain the temperature of the water. Fine specimens of crystallized sulphur abound in this neighbourhood ; but from their delicate structure and extreme fragility, it is rather a difficult matter to convey them to any distance so as to preserve their beauty. The barren hills in the neighbourhood produced an elegant *Lycopodium* (215), which I suppose to be an entirely new species ; and the same locality, afforded a new species of *Gaultheria* (216), a branching shrub, 4—7 feet in height. Near the station I observed a large *Ranunculus* (218) growing in low places in the vicinity of the lake ; and in the thickets, close by, a

species of *Rubus* in fruit (219), a shrubby plant, climbing over the bushes and young trees near it. Some natives informing me of a new and peculiar tree, which grew on Mokoia, the island in the middle of the lake, I crossed to it, and sought for the same, but found nothing new. From subsequent information, I was led to conclude that the tree of which I had been in quest was no other than the *Vitex littoralis* of A. Cunn.; one individual of which, according to the natives grew on the island, but not another in the whole district. I observed the natives continually masticating a kind of resinous gum, which was insoluble in water, and did not decrease through the process of repeated chewing; this, they informed me, they procured from the Pukapuka (*Brachyglottis repanda*, A. C.), assuring me that the swallowing of the substance would cause death. They pointed out the shrub, which, although slightly differing in general appearance, bore a strong resemblance to Cunningham's plant; yet as it was neither in flower nor fruit, I did not collect any specimens. It may, however, prove new. Mr. Chapman has kindly promised to procure me some of the resinous matter, and specimens of the shrub when the season comes. Through the kindness of the same gentleman I obtained, from a spring in the neighbourhood, several specimens of siliceous matter, deposited by the waters of the springs on twigs, leaves, &c. lying in it, some of which I inclose in the case now sent. The lake contains an abundance of small cray-fish, which are very good eating. Here are also two small kinds of fish, called by the natives *Kokopu* and *Inanga*, and a black bivalve a species of *Unio*; the whole of which are common in most of the fresh-water streams in New Zealand.

Jan. 13th.—Early this morning I left Te Ngae. Crossing the lake to the N.W. extremity, I landed, and once more recommenced my journey. We soon entered the dense forest, through which the road to Tauranga lies, and in which we travelled until sunset. Here, in a low, wet, and shaded spot, I noticed another new and peculiar species of *Lomaria*

(291, *L. nigra*, *n. sp.* W. C.) From the stony banks of Mangarewa, a small river running in a deep ravine, I procured specimens of a small *Cyperaceous* plant (221), which appeared to me to be new. In this locality, too, I discovered an elegant *Lindsæa* (292, *L. viridis*, *n. sp.* W. C.) and another fern, which has puzzled me exceedingly, but which may possibly be, after all, but a variety of *Aspidium hispidulum*, Swartz. I send you, however, a specimen (293) for minute examination. In travelling this day, I carelessly plucked a fern, which grew pendulous from a tree by the path-side, believing it to be *Asplenium falcatum*, Forst.; happening, however, to preserve the fragment, I have since examined it, and consider it a very distinct species; I have named it *A. Forsterianum*, in honour of that celebrated Botanist, whose name should ever be held in remembrance by all persons botanizing in the forests of New Zealand: a portion of my only specimen I send you (294). I also obtained in this forest some fine specimens of a *Tmesipteris* (296), which, if not possessing distinctness sufficient to constitute a new species, differs much from my specimens of *T. Forsteri*, Endl. in size and general appearance.

Whilst my natives were pitching my tent, I obtained a few specimens of *Jungermannia* (220, 223, 225, 226) and a Moss (222), with, apparently, a peculiar yellow lichen parasitical upon it. I hope that some, at least, of these may prove to be new. As the shades of night closed about us in the deep recesses of the forest, we were visited with numbers of green coleopterous insects which my natives caught, roasted, and ate. During the night the mosquitoes so sadly annoyed us as to keep us from sleeping. At an early hour the next morning we arose and resumed our march, continuing our course, as yesterday, in the forest. I gathered a fine Moss (227), a species of *Polytrichum*; and an *Urtica* with lanceolate leaves (224), which appears to be undescribed. Emerging from the wood, I discovered a fine *Gaultheria* (217), perhaps the same as the one from Rotorua, (216), already mentioned. From the summit of the hills where

this long forest terminates, a fine and extensive prospect of Tauranga harbour, distant about fifteen miles, presents itself to the view. The road from this place to the sea-side lies through fern land, and is chiefly a descent the whole way. We arrived at the mission station about six P.M., without observing any thing worth noticing on the road thither.

At Tauranga I remained a few days; and on the 19th, once more resumed my peregrinations. Crossing the inner harbour which is wide and very shallow, we landed at the N.W. extremity of the bay where the road to the interior commences. Our route this day, after landing, being principally by the sea-side, afforded nothing new, save a species of *Anthoceros* (231), which grew in wet places on the pipe-clay cliffs. We bivouacked for the night by the side of a small stream where we were incessantly tormented with mosquitoes; and to add to our misery, my guides returned *sans cérémonie*, leaving my baggage in the desolate wild; through which conduct we were obliged to remain supperless, not having had any food since our early breakfast. The next morning, after some delay from our want of guides, who were eventually obtained from a party of natives in the neighbourhood), we again proceeded, and entering a dense forest, travelled on for several hours, emerging at length on the top of Te Wairere, a very high hill, from the summit of which the view of the surrounding country is most extensive. Tongariro, a very high and still active volcano in the Taupo district, my guide assured me may be seen in clear weather from this place. Beneath us, in the extensive plain, the river Waiho, hence navigable for canoes, meandered, mingling its waters with those of the ocean at Puriri on the Thames. In the forest I obtained a few small Cryptogamic specimens (210, 211, 212, 213, 214), but no other plants attracted my notice as being either new or rare. Descending Te Wairere we halted at a brawling stream at its base to roast a few potatoes. Here, on the brink of the stream, I discovered a small tree of a genus unknown to me,

(unless it may prove to belong to *Trophis*). I only observed one plant, which was about fifteen feet high, with smooth cinereous bark, solitary crimson fruit, and branches not spreading (228). On cutting its bark a profusion of thick viscid milky juice flowed out. A fine *Pimelva* (233) was growing plentifully here, which may prove to be identical with no. 24. A small *Jungermannia* (230) and a species of moss (232), were found by the side of the stream, the waters of which afforded a species of *Alga* (229). Leaving this place we crossed the river Waiho, which at the ford was nearly breast-high, and proceeded on, over the plain and through the extensive swamps, towards Matamata, a large native village, which place we reached late at night. In crossing the marshes I only noticed a *Coprosma* as being new, and of which I brought away specimens (207).

21st.—Early this morning I left Matamata, travelling in a S.E. direction towards Maungatautari, an elevated district situated nearly midway between the east and west coasts. In crossing a small river I discovered a peculiar *Carex*-like procumbent plant (206) growing in its bed, completely under water. As it was now the driest season of the year, and as the water of the stream was nearly 2 feet deep, this plant must necessarily be always immersed. A graceful-leaved *Hydrocotyle* (209) I also procured specimens of. After walking about eight miles over level and barren ground, we entered a romantic valley called by the natives Hinuera. This valley has on either side high and perpendicular volcanic rocks, composed of a conglomerate of pumice, scoriæ, obsidian, &c. On the south side of the valley this rocky rampart ran continuously for nearly two miles, while on the north side the hills bore on their table-tops groves and clumps of graceful pines, which contributed not a little to the beauty of the landscape. Halted at 2 P.M., to dine under a large and projecting crag, which, jutting out from the rocks on the north side of the valley, overhung our path. Here, beneath this rock, I discovered an elegant *Asplenium* (295, *A. Hookerianum*, n. sp., W. C.), a species approaching

very near in habit and affinity to *A. Colensoi*. I did myself the honour and pleasure of naming this graceful Fern in compliment to my much respected and talented friend J. D. Hooker, Esq., M.D., who, in the capacity of Naturalist, visited these islands in H.M.S. "Erebus," (one of the Antarctic Discovery Ships) in the winter of 1841. In a thicket in this neighbourhood through which we passed, I detected a graceful shrub of very slender habit (234) with peculiar hairy (strigoso-hispid) bark. This plant has only a few divaricated branches, and attains to the height of 6—9 feet. Proceeding hence we suddenly came upon a most remarkable subsidence of the earth in the midst of a large plain. After descending through a rapidly inclining and narrow defile having sandy slopes on either side (on which in dense patches grew that little plant I had found in low sandy places in Waiapu valley on the east coast, no. 29), I reached a level also of sand, and destitute of the least blade of vegetation; thence I descended an almost perpendicular descent knee-deep in sand to another level, where a subject for contemplation and astonishment presented itself. On all sides rose perpendicular and sandy cliffs, varying in height from 150 to 200 feet, for the most part white and sterile and composed of loose volcanic sand and pebbles to their very bases. At the bottom of this immense ravine a gentle stream wound its silent way, whilst a little further whole trees dead and charred (from whose sides the loose sand, &c., had been removed by the action of the winds and rains) stood erect, in the spots where many years ago they once grew at a depth from 1 to 200 feet below the present level of the soil!! I greatly regretted my being so much pressed for time in passing this place (called by the natives Piarere), but the Sabbath drew nigh, we had no provision, with several miles yet to go ere we should reach a village, and the loose sand through which we were now toiling we often sunk in up to our knees. Quitting this hollow, and ascending its S. W. side, I was again agreeably surprised and pleased in seeing the noble River Waikato, with

its blue waters (here wide, and swift, and deep), rolling majestically along. This is the largest fresh-water stream I have yet seen in New Zealand. This river the natives navigate in their canoes from above this place to where it disembogues into the south ocean on the west coast, a distance of upwards of two hundred miles. In consequence of there not being any food here, we had to travel nearly five miles in an almost southerly direction by the bank of the river, ere we could cross it.

There, however, we found a rude bridge thrown across at a place where the river is very narrow, being confined within a sandstone channel through which it rushes with fearful velocity, eddying, and foaming, and carrying everything before it. The sandstone rocks on either side, through the softness of the stone, and the continual working of the waters, were fretted into a thousand fantastic shapes. Leaving the river, and ascending the western banks, we proceeded in a westerly direction for upwards of six miles, arriving at sunset, unwell, in pain, and much fatigued, at Wareturere, a small village in the Maungatautari district, where we were hospitably received by the natives. The sun, throughout this day, was intensely hot, and most of the country over which we passed quite free from wood, and very dry and dusty. Gained little indeed, in botany this day.

24th.—Early this morning, I resumed my journey. The fervent sun, unobscured with clouds, told of another melting day; and the high fern-brakes through which we had to force our way, abounded with their dreaded subtle yellow dust.

“ In vain the sight, dejected, to the ground
Stoops for relief; thence hot-ascending steams,
And keen reflection, pain.”

“ Distressful Nature pants,
The very streams look languid from afar,
Or, through the unsheltered glade, impatient seem
To hurl into the covert of the grove.”

Cheering my native companions in travel, we struggled on together up the steep hills. Reaching the summit of the

wooded mountainous range, we descended over fern-land into extensive swampy plains. I observed that pest to agriculture, the large-leaved *Rumex*, very plentiful here. The natives say that the Negapuhi tribes (who live in the north parts of the island, and with whom they were formerly at continual enmity), introduced it in order to spoil their lands. I doubt, however, the *cause* assigned for its introduction here in the very centre of the island, but not the *fact*. At Poverty Bay and parts adjacent, the natives assert that the seed of this plant was originally sold them by whites for tobacco seed! It is now to be met with in several districts, in common with many other noxious European weeds. I have often noticed in travelling, certain spots abounding with the rankest vegetation, but without a single indigenous plant. The new comers appear to vegetate so fast as quite to exterminate and supersede the original possessors of the soil. In crossing a very deep and boggy place in the swamp, this morning, I again met with that peculiar and pretty little leafless plant already noticed, no. 143, in perfection. I found it, however, not a very easy matter to procure specimens, as it grew only on the deep black mud of the bog; fortunately, I succeeded in gathering some (208), without getting very deep into the mud. Here, in the midst of the swamp, a beautiful bird,* apparently of the crane kind, rose gracefully from among the reeds, and flew slowly around us; its under plumage was of a light yellow or ochre colour, with dark brown upper feathers. None of my natives knew the bird, declaring they had never seen such an one before. Leaving the swamp and entering on the plain beyond it, I discovered a new and elegant plant of the *Orchideæ* family and genus *Microtis*, possessing a beautiful carmine-coloured perianth, with pubescent scape and spike (203). It was, however, very scarce, and only grew in one low spot by the path-side. Most of the plants had flowered; but I was for-

* I am inclined to believe that it was a similar bird to the specimen herewith sent for the Museum of the Linnæan Society.

tunate enough to procure two specimens that were still in blossom. I also met with a little *Restiaceous?* flexuose and procumbent plant (204), which grew in patches plentifully in this locality. A beautiful Moss, too, I discovered here (235), and noticed that pretty little *Lobelia*, already mentioned under no. 58, growing hereabouts in great profusion. Towards evening, in crossing a deep and watery swamp, I gathered specimens of a *Coprosma* (205), which may prove a new species; it was a small tree, 6 to 8 feet in height. At sunset, we reached the Mission Station at Otawao where Mr. Morgan resides. This place being almost in the midst of an extensive plain affords little entertainment to the botanist.

26th.—Again recommenced our journey towards the western coast. I did not gather a single plant during the whole of this day's march, although we travelled over many a weary mile of desolate wilderness, until some time after sunset. At one part of our route this morning, the scenery was of the most enchanting description; groves and clumps of that elegant Pine, *Dacrydium excelsum*, were intersected with small placid lakes, and level plains, free from underwood, the whole appearing as a work of art. Late at night we threw ourselves down to rest among the fern in a small and miserable village near the banks of the river Waipa. Rest, however, was out of the question, for our old implacable winged tormentors, the mosquitoes, were innumerable. The next morning before sunrise hungry, weary and sleepy, we willingly started from this wretched place, where our night, instead of being one of rest, had literally been one of continual torment.

Passing a deep and muddy water-course, I obtained specimens of a large-leaved *Myriophyllum* (238), which may probably prove to be a new species. The banks on either side of the water in which it grew being of deep mud made it difficult to procure good specimens. A half-an-hour's march brought us to a village on the immediate banks of the Waipa river. Here we obtained a canoe and got some food, which

having quickly despatched, we proceeded down the river in our bark. This river has a very tortuous course, winding continually to all points of the compass.* Its width is pretty uniform, generally being from 70 to 100 feet, with a slow current. It is navigable hence for large boats, and the sides are, in many places, densely clothed with trees to the water's edge; among which *Dacrydium excelsum* shows itself conspicuous. In its banks which are mostly composed of alluvial earth, and which in some places are 14—20 feet in height, pipe-clay and volcanic sand sometimes present themselves to the view. At four P.M. we reached Ngaruawahie, the spot where the junction of this river with the Waikato is effected. As before the Waikato came rolling impetuously on, carrying its waters quite across the placid Waipa to the opposite bank. From this place the two rivers bear the name of Waikato to the sea, and justly so too, as the waters of the Waipa are completely lost in those of the deep and rapid Waikato. A little below Ngaruawahie we met a native in a canoe with a live and elegant specimen of the genus *Fulica*. I hailed the man, and purchased the

* I will just mention the direction of the river for the first ten miles, as I took it down from observation with my compass :

N.E.

N.

N.W., 1 mile.

S.S.E.

S.

S.S.W.

S., $\frac{1}{2}$ mile

S.S.W.

W.

W.N.W., $\frac{1}{2}$ mile,

W.S.W.

W., $1\frac{1}{2}$ mile.

W.N.W.

N.W.

N.

N.N.E., $\frac{1}{2}$ mile.

N.

N.W.

Those bearings without distances annexed, I supposed to be under half a mile.

bird, which he had recently snared for a little tobacco. It was a most graceful creature: and as far as I am aware, an entirely new and undescribed species. Its general colour was dark, almost black; head grey, and without a frontal shield; fore-neck and breast, ferruginous-red; wings barred with white; bill sharp; feet and legs glossy olive; toes beautifully and largely festooned at the edges; the eyes light-coloured and very animated. The bird was very fierce, and never ceased attempting to bite at every thing within its reach. I kept it until we landed, intending to preserve it; but it was late, and I had neither material at hand nor time to spare, and the animal too, looked so very lovely, that I could not make up my mind to put it to death, so I let it go: it swam, and dived, and disappeared. From its not possessing a frontal shield on the forehead (which is one of the principal generic marks of the Linnæan genus *Fulica*), it may possibly be hereafter considered as the type of a new genus serving to connect the genera *Fulica* and *Rallus*. Not a doubt, however, in my opinion can exist, as to its being naturally allied in habit and affinity to the former; I have therefore named it *Fulica Novæ Zelandiæ*. In size, it was somewhat less than our European species, *F. atra*. I gained not any botanical specimens this day, save the *Myriophyllum* already mentioned, although I had every reason to believe that many new and interesting plants would doubtless be found in the dense and ever-humid forests on the immediate banks of this noble river. Time, however, would not permit my delaying for that purpose.

27th.—This morning, at an early hour, I recommenced my voyage down the Waikato. I found the river to widen considerably, being in some places from three hundred to five hundred yards in width, but very shallow. Its course, here, was not so sinuous and much more northerly than those portions we passed over yesterday. The land is low on either side, and, as I proceeded, several small and flat islands divided the river into channels. After paddling about twenty miles we beached our canoe on a small island, in order to

breakfast. The river here is very shoal with a sandy bottom, which, together with the subsoil of the island on which we landed is of volcanic origin consisting of broken lava and pumice. I found nothing new among the vegetation of the islet. Near this place, the natives informed me, and at a short distance from the right bank of the river, is a large lake, in which are quantities of Kanae, (*Mugil* —) and Patiki, (*Pleuronectes* —) neither of which fish is found in the Waikato. The lake is named Waikare and runs into the Waikato a little lower down. As we proceeded, the banks of the river became more and more lovely being, in many places, clothed with the richest profusion of vegetation to the water's edge. Among the trees the Kahikatea (*Dacrydium excelsum*) was ever predominant. We noticed a Kauri (*Dammara australis*) to-day for the first time since we left the Bay of Islands; at seeing which my natives, whom I had brought with me from the East Coast, (and who had never seen one of these pines before it not being found in those parts), were much gratified.

Towards evening we passed several islets in the river, some of which were high and beautifully wooded, and noticed *Dacrydium excelsum* growing very close together in the forests. Gathered, overhanging the banks of the river, a specimen of *Parsonsia* with axillary inflorescence (239), which may, however prove but a variety of *P. heterophylla*, as that plant continually varies in appearance, hardly two specimens being alike. I also obtained a specimen of a small weak plant with opposite obovate and sub-spathulate leaves (240) from inundated places near the river, which was new to me; I could not, however, detect it anywhere in flower. Two specimens of *Epilobium*, (241, 244) one (244) a very fine plant; a *Myriophyllum* (245) and a linear-leaved floating plant [*Potamogeton*?] (247) which grew in the water, I also procured in this locality. Brought up, for the night, on a little open flat on the left bank of the river. The mosquitoes, as might have been expected, were in interminable clouds and most annoying.

Large quantities of an elegant species of *Cyperus*, (*C. fulvus?* *R. Br.*) grew here on either shore.

28.—Early this morning we resumed our course down the river which here begins to be under the influence of the tides. The morning was squally and lowering, with every indication of a gale at hand. As we neared the sea-coast the river became very wide, being from two to three miles across, and containing several flat islands. The water here is shallow. At noon we had a prospect of the outer range of hills on the West Coast; and a more dreary and sterile one cannot easily be imagined; high and broken ferruginous-coloured sand-hills destitute of the least vestige of vegetation. The wind setting in from the sea against the ebbing tide caused the water to become very rough, calling forth our united energies to keep our frail bark from swamping. At two P.M. we landed in safety at Maraetei, a station belonging to the Church Mission where the Rev. R. Maunsell resides, whose kind and hospitable reception quickly made us forget the little danger we had so very lately been in. Maraetei is on the immediate south bank of Waikato river, and only about a mile distant from the heads. The land on the southern side is very high and precipitous; while on the northern it is lower, and for three or four miles the very perfection of barrenness. Mr. M., who has been several times up and down the river, supposes the distance which we came by water to be from 130 to 150 miles; being very nearly what I had calculated it. The river decreases rapidly in width as you approach its mouth, which is exceedingly narrow, with a bar across it, on which is two fathom of water. Here, the breakers burst continually; one or two small vessels have, however, entered.

Feb. 1st—At six A.M. we left Maraetei; crossing the river in a canoe to the northern bank, and proceeded over the sand hills on our journey towards Manukau. We soon descended to the outer coast, over the interminable sandy beach of which we travelled until an hour after sunset; when greatly fatigued

we halted for the night on the sands, about three miles within the Southern head of Manukau Bay. The land to our right this day was high and much broken, composed of sand and sandstone, and covered with verdure. The continual falling, however, of the sand, &c. of which these hills are composed, will, in process of time, cause them entirely to disappear. I noticed some plants, evidently species of *Edwardsia*, the habit and foliage of which differed from the one I have hitherto seen. I took specimens (243), and regretted there not being either flower or fruit. A little *Limosella*? (242) also grew here in the sand. On the face of a damp cliff, near a small water-course which trickled down the rocks, I discovered a peculiar succulent plant bearing a raceme of obovate red drupæ (246). These, with a moss (237), from the wet rocks in this locality, comprised the whole of my collection during this day's journey.

The next morning we continued our course by the sinuous shores of Manukau Bay. We soon reached a native village, where, gaining a supply of potatoes, &c., we recruited our strength, and, engaging a canoe, paddled to the upper extremity of the harbour, landing at Otahuhu, the isthmus connecting the northern and southern parts of the Northern Island of New Zealand. This isthmus is very narrow, only about three-quarters of a mile across, and an almost level piece of ground. There are not any forests in this locality, scarcely even a single tree; the eye wanders over a succession of low volcanic hills, bearing nothing but the monotonous brown Fern (*Pteris esculenta*), with here and there a shrub of *Coriaria sarmentosa* rising a few feet above the common denizen of the soil by which it is everywhere surrounded. This neighbourhood was once densely inhabited; but the frequent and sanguinary wars of the ferocious tribes of this benighted land, have all but entirely depopulated these fertile districts.

Having concluded to return overland to the Bay of Islands, we procured a supply of rice—the only portable article of food obtainable in these parts—for we were now

about entering on an uninhabited route, and that too without a guide.

Early in the morning of the 4th, we left Otahuhu in a small canoe which we had borrowed, and paddling down the Bay about four miles, landed on the northern side of the harbour, and continued our course by the muddy winding shores of Te Wau, a little cove, where the path leading to Kaipara commenced. Here, while my natives were engaged in cooking our breakfast, I discovered a shrub of a genus altogether unknown to me. It bears an oblong succulent *bacca*, containing several large, angular, and irregularly shaped seeds (248); the mode of growth is diffuse and slender, with but few branches, and its height is from 5 to 9 feet. In habit alone it approaches some species of the *Coprosma* genus. There were several of these shrubs here, on the immediate banks of a little rivulet which ran through this dell; I did not, however, observe them in any other locality. Continuing our journey, I found, in ascending the first clayey hill from the sea-side, a handsome shrubby *Dracophyllum* (249), which, from its not being noticed by Cunningham in his "Precursor," I suppose to be a new species. This shrub is from 2 to 5 feet in height, somewhat rigid in its growth, and branched at bottom. It will, with the other new species already mentioned, No. 145, naturally fall between *D. latifolium*, Banks, and *D. Urvilleanum*, Rich., and thus connect the whole of the already known New Zealand species. We travelled on, over open and barren heaths, in a northerly direction, till sunset, but saw nothing new in these dreary and sterile wilds, save the *Dracophyllum* already noticed. Bivouacked for the night in a little dell, nestling among the close growing *Leptospermum*: not a stick being anywhere within ken large enough to serve as a tent-pole. Next morning we recommenced our journey in rain, the country for several miles being much the same as that of yesterday. About noon we passed some forests of *Dammara*, which were burning fiercely; some person or persons who had lately gone that way having set fire to the brushwood, which soon caught the

forests. This is a very common occurrence in New Zealand, and often thoughtlessly done by the natives on purpose to cause a blaze, by which means many a noble forest of Pines has been entirely consumed. A species of *Metrosideros* was growing in these woods, a small tree about 15 feet in height, of which I took specimens (250). A fragment of a woolly-looking *Jungermannia* (251), a *Polygonum* (253), and a *Pimelea* (254) were also procured in this locality. All these, perhaps, have been already noticed.

On arriving at Kaipara, we found we had no means of crossing the harbour, a sheet of water which, from where we now were, at the extreme southern inlet of the harbour, to the nearest landing place on the northern shore, was more than sixty miles across. Our situation at this place was rather unpleasant, no natives being near. Rather, however, than retrace our weary steps to Otahuhu, we agreed to wait a day or two, in hopes of a canoe arriving at the landing-place. Here then we remained until the night of Tuesday the 8th, making fires on the brow of the hill, in order, if possible, to attract the attention of the inhabitants residing on the opposite shores of the water before us. No one, however, came; and on Tuesday, reconnoitring with my glass, I saw the roof of a hut about four miles distant, which, from its construction, I knew to belong to a white. Thither, without delay, I despatched two of my natives, who, to their credit be it said, willingly went, although they had to force a passage through mud and underwood the whole distance. At night they returned, with two whites, in an old, patched-up, and leaky boat, in which we gladly left this wretched place, where the mosquitoes were more numerous and intolerably annoying than I had ever before found them. So thick and tormenting were these insects at night, that I was obliged to leave my tent, and move about in my cloak from place to place, as they successively found me out. We had, in hopes of avoiding them, pitched our tent on the top of the hill, more than a mile from the water below, but without the least change for the better. On the morning of the 12th, after encoun-

tering no little hardship and danger, we landed near the upper end of Otamatea inlet, on the north-east side of Kaipara. Here the boat left us, and we soon found that our situation was ten times worse than before; for there was no path, nor the slightest indication of the treading of a human foot in these solitary and pathless deserts. Return we could not, for our boat was gone; stand still we dared not, as our small supply of food was fast diminishing; proceed we hardly cared to think of, not knowing whither our tortuous course would end, in a country like this, where we now, for the first time, were hemmed in among tangled brakes and primæval forests, bounded by a distant horizon of high and broken hills. In this exigency I determined on proceeding by compass in as straight a line as possible to the eastern coast; for although I had not a map with me, I was well aware that the Island was narrow in these parts. Words however fail to describe what we had to undergo in forcing our way through the horrid interwoven mass of shrubs, creepers, and fern, and prostrate trees, and swamps, and mud. Suffice to say, that by dint of extreme exertion I providentially gained the sand-hills at Manga'wai, on the east coast, by ten A.M., on Monday the 14th. Descending the hilly range on the sea-coast, I found there was an extensive inlet to cross, which, as the tide was flowing fast, I lost no time in fording; so plunging in, I waded to the opposite shore, the water being breast-high. I supposed my natives to be following pretty closely after me; and feeling quite an appetite for my breakfast, having walked nearly six hours this morning, I commenced looking narrowly about for fresh water, continuing my journey towards the coast. Here, exhausted though I was, I discovered and secured an hitherto unnoticed species of *Leptospermum*, a shrub or small tree, growing plentifully on the sand-hills, from 6 to 10 feet in height, bearing a villous capsule (255), apparently near *L. attenuatum*, Sw. Here, too, a shrub of the Order *Compositæ* (perhaps identical with *Cassinia leptophylla*), was seen profusely, of which I brought away a specimen for

examination (256). Travelling on by the rocky coast, a little water-course which ran on the beach, afforded a small plant, perhaps a species of *Chara* (257); and on the sand near by, a *Chenopodium* (258), the only plants of which I took specimens. It was now past noon; the day was very sultry, and I, having recommenced my journey this morning long before sunrise, was tired, wet, and hungry, in a desolate and wild place, when I realized a conviction which had been for the last hour gaining ground in my mind, that I was alone. I retraced my steps to the sand-hills, and sought about, and shouted repeatedly, but all in vain; nought but the loud dash of the billow, as it broke on the lonely strand, with now and then a melancholy wail of the sandpiper, burst on my expectant ear. My natives somehow had strayed into another direction or lagged behind, so that I saw nothing more of them until after sunset on Tuesday the 15th, when they joined me on the outer beach of Wangarei Bay. During these two days I managed to subsist on some shell-fish from the rocks, the scanty sarcocarp of the fruit of the *Corynocarpus lævigatus*, Forst. (the large kernel of this fruit being in its raw state an active poison) and the inner young leaves of *Areca sapida*, Sol.; this latter plant affords good eating, a *bonne bouche* to any one in my situation. My natives were exceedingly happy the next night on finding that I was safe, as they knew not what had become of me. To their honour I would relate, that though they were bearers of provisions, yet they would not touch a morsel during the two days we were separated from each other, knowing that I was without food; saying, "What! shall we eat while our father is starving?" Like myself, they had subsisted on the shell-fish and the fruit before mentioned.

The remainder of my journey is briefly told. On the morning of the 16th we travelled on to Te Ruakaka, a village a few miles from the south shore of Wangarei Bay; where we were hospitably received, and made a hearty breakfast. Hence we crossed Wangarei Bay in a small canoe, running no little risk in so doing. Proceeding thence by the line of

coast, we safely reached the Bay of Islands, on the 22nd of February; with, I dare hope, thankful hearts to our Heavenly Father for all his mercies.

I did not observe anything new in Botany during these few last days; in fact, I did not particularly look after anything, for I had often gone over the ground to Wangarei; and I much wished to reach the Bay of Islands, with the least delay possible, in consequence of the disturbed state of that district.

Thus, my dear Sir William, I have endeavoured to give you a faithful outline of my rambling journey. And although I have extended this present communication, written by snatches, to a much greater length than was originally contemplated, it will after all, I fear, be considered very deficient in point of satisfactory information.

I have also, I confess, great reason to apprehend that many of the specimens, fondly cherished by me as new, may after all be well known to you; notwithstanding I hope to be forgiven for thus presuming too much, in this my novitiate; when you kindly consider my situation, here at the antipodes, not only without, but far away from, books of reference. My errors of conjecture, too, in venturing an opinion as to what genus certain unknown plants may belong, I trust, for the same assignable reason, will also be charitably construed. Making then every fair deduction, I think there are still grounds for hoping that a portion of these plants will prove quite new to science.

In conclusion, my dear Sir William, wishing you the same amount of pleasure in looking over, as I had in gathering and putting up for you, the specimens now sent,

Allow me once more to subscribe myself,

Very sincerely and faithfully yours,

WILLIAM COLENZO.
