

II.—BOTANY.

ART. XXII.—*Notes on the Three Kings Islands.*

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[Read before the Auckland Institute, 3rd October, 1887.]

DURING the return voyage of the Colonial Government steamer *Stella* from the Kermadec Islands, Mr. Percy Smith and myself were enabled, through the kindness of Captain Fairchild, to land and spend two or three hours on the Three Kings Islands. As up to the time of our visit nothing whatever was known of the natural history of the Islands, and as their position at the extreme north of New Zealand renders any information on their plants, birds, &c., of value to those who are working out the geographical distribution of the flora and fauna of New Zealand, I propose to give an account of what we were able to observe during the short time at our disposal.

The Three Kings are a group of small islands situated about 33 miles W.N.W. of Cape Maria van Diemen. One of them is considerably larger than the rest, and is known as the Great King. It is about $1\frac{3}{4}$ -mile in length, by $\frac{3}{4}$ -mile in width; and its highest point, according to the Admiralty charts, is 997 feet above sea-level. Two smaller islands are called the East King and West King respectively. They are each of them somewhere near $\frac{1}{2}$ -mile in length, and about 600 feet in height. On the outside of the West King is a straight row of 8 or 9 tall conical rocks, terminated by a small island about 350 feet in height. This group is called the Prince's Islands, and has a most singular and picturesque appearance when seen from the distance of a mile or two.

The *Stella* approached the Great King on the S.E. side. Seen from the sea, the aspect of the island is barren and forbidding in the extreme. Black and rugged cliffs, bare of vegetation, and often several hundred feet in height, form the greater part of the shore, and against them a heavy surf continually rolls, the spray dashing far up their sides. The summit of the island appeared to be covered with short tea-tree, flax, and sedges, and gave little promise of anything but a very scanty vegetation. Steaming slowly along the eastern shore in search of a landing-place, we passed between the East King and the main island. Further to the northward the cliffs were still

higher and more perpendicular, with numerous huge caves, into which the seas broke with a deep hollow roar. Rounding the next point we entered a deep bay, that almost cuts the island into two, and in which we obtained good shelter from the heavy easterly swell running outside. We anchored about a quarter of a mile from the shore, the depth being about 18 fathoms, and shortly afterwards landed with comparatively little difficulty at the head of the bay, on a rough boulder beach, everywhere encumbered with large masses of rock that had fallen from the cliffs above.

The cliff at the head of the bay is at least 350 feet high at its lowest point, and the climb to the top, although by no means difficult, was steep and rugged. The first plants noticed after leaving the beach were well-known maritime species, such as the ice-plant (*Mesembryanthemum australe*), the wild celery (*Apium australe*), *Spergularia rubra*, *Senecio laetus*, *Lobelia anceps*, *Isolepis nodosa*, etc. Scrambling among the rocks were large masses of *Sicyos angulatus*, and the pretty white-flowered *Angelica rosafolia*. A little higher up, clumps of dwarf tea-tree were passed through, alternating with patches of flax (*Phormium tenax*) and toetoe grass (*Arundo conspicua*). A few small trees of the rare *Pisonia umbellifera* were noticed, one of them covered with the viscid seed-vessels that so often catch small birds, such as the white-eye or fan-tail, that are so unfortunate as to touch them. Here, too, a handsome new *Pittosporum* was gathered, allied to the karo (*P. crassifolium*) and to *P. umbellatum*. It differs from the first in the broader flat leaves, which are quite glabrous when mature, and from the second in the fewer flowers and very differently shaped seed-vessels. It has ornamental foliage, and its mode of growth is neat and compact, so that it will prove an acceptable addition to our gardens. I have named it *Pittosporum fairchildi*, in honour of the well-known commander of the *Stella*. Two other shrubs deserve mention: *Hymenanthera latifolia*, a scarce plant in New Zealand, except on outlying islands of similar character to the Three Kings, but of common occurrence in Norfolk Island; and the glossy-leaved *Coprosma baueriana*, so very plentiful on maritime rocks all round the North Island. On some rocky ledges near the top of the cliffs a handsome fern new to New Zealand was collected. It belongs to the genus *Davallia*, and is probably a variety of the well-known Australian and Norfolk Island *D. pyridata*. It was afterwards found to be plentiful over the greater part of the island. Reaching the top of the cliff, we found ourselves only a short distance from the head of another bay, stretching in from the south side, and which, with the one we had left, very nearly divides the island into two. As we had not time to explore both portions, a start was made for the highest peak, which is situated in the north-western half of the island.

The vegetation on the top of the island is mainly composed of stunted tea-tree (*Leptospermum scoparium*) mixed with flax (*Phormium tenax*), common fern (*Pteris aquilina*), and some common sedges. A few ericetal plants grow in the shelter of the tea-tree, such as *Leucopogon fraseri*, *Pimelea prostrata*, *Haloragis alata* and *H. depressa*, *Lagenophora forsteri*, *Gnaphalium involucreatum*, etc. In one or two places, near the edge of the cliffs, some worn and stunted pohutukawas (*Metrosideros tomentosa*) can be found. In the deeper gullies, (several of which, it should be mentioned, contain nice little streams of water,) the tea-tree attains a greater size, and is mixed with shrubs or small trees, but there is nothing approaching the dimensions of an ordinary forest tree. Descending from the highest peak into one of these gullies, the first plant of interest noticed was a new species of *Coprosma*, with the habit of the common karamu (*C. robusta*), but with leaves fully twice the size, and berries as large as small plums—in fact, the fruit is much the largest of the genus. For this plant I propose the name of *Coprosma macrocarpa*. Along the margin of the little stream which occupies the bottom of the gully were large masses of the rare *Colensoa physaloides*, which must present a charming appearance when covered with the pale blue flowers. Lower down a few small trees appeared, as the mahoe (*Melicytus ramiflorus*), wharangi (*Melicope ternata*), and mangeao (*Tetranthera calicaris*). Among them was a remarkable new species, very distinct from any plant hitherto found in New Zealand. It falls into the genus *Paratrophis* (the *Epicarpurus* of the "Handbook"), but belongs to the section *Uromorus*, of which only three species were previously known—one inhabiting the Fiji Islands, another Tahiti, and a third the Philippine Islands. The occurrence of a fourth species in New Zealand is a very extraordinary and inexplicable circumstance. I have ventured to associate with it the name of my fellow-traveller, Mr. Percy Smith.

A few tree-ferns were noticed, but all of one species (*Cyathea medullaris*). Of smaller ferns, *Pteris tremula*, *P. comans*, *Lomaria proceræ*, *Doodia media*, *Asplenium flaccidum*, *Aspidium richardi*, and *Polypodium billardieri* were all plentiful. So also was *Lomaria acuminata*, which has not been previously recorded from New Zealand, although abundant in Norfolk Island and Sunday Island.

I append a list of the flowering plants and ferns noticed, in all 82 species. Of this number five are new to the New Zealand flora, three of them being new to science. The list is far from being complete, and will be materially added to when the island is thoroughly explored. My visit was too short to allow me to do more than examine a small portion; and I had no opportunity of landing on either the East or West King, both of which are covered with light bush, and doubtless have plants not found on the main island.

The following land birds were noticed on the Great King:—The common hawk (*Circus gouldi*), morepork (*Athene nova-zealandiæ*), kingfisher (*Halcyon vagans*), tui (*Prosthemadera nova-zealandiæ*), white-eye (*Zosterops lateralis*), utick (*Sphenæacus punctatus*), grey warbler (*Gerygone flaviventris*), ground lark (*Anthus nova-zealandiæ*), pied fantail (*Rhipidura flabellifera*), red-fronted parrakeet (*Platycercus nova-zealandiæ*), quail (*Coturnix nova-zealandiæ*). Of the last mentioned I saw two individuals, and another one was seen by Mr. Percy Smith and Mr. Hazard. Its occurrence on the Three Kings was quite unexpected; and as it is nearly, if not altogether, extinct on the mainland, we may congratulate ourselves that it has been found in a locality where it is likely to remain undisturbed for many years to come. Besides the species named above, another one is common which I failed to identify. It is about the size of the bell-bird, and has much of its appearance and habits, but the under-parts are greyish-white, and the song is altogether different. I regret that I was unable to obtain a specimen, for there is little doubt that it will prove to be an addition to our lists.

The Three Kings were discovered in 1643 by the celebrated Dutch navigator Tasman. As his account of the discovery is very little known, and as it possesses some interest from proving that the islands were inhabited in his time, I will quote it here:—

“January 4, 1643. This morning we were near a cape of land (Cape Maria van Diemen), and had an island N.W. by N. from us. We hoisted the white flag for the officers of the *Zeehaan* to come on board, and we resolved to stand for the island to look for fresh water and greens. We find a strong current setting westward, and much sea from the N.E., from which we hope to find a clear passage eastward. In the evening we were near the island, but could not observe that anything we wanted might be got here.

“The 5th, in the morning, we had little wind and a calm sea. About noon, we sent Francis Jacobsz in our shallop, and the supercargo, Mr. Gillemans, in the *Zeehaan*'s boat to the island, to try if fresh water could be got. In the evening they returned, and reported that they had been in a safe small bay where fresh water came in abundance from a high mountain; but that there was a great surf on the shore, which would make watering there troublesome and dangerous. They rowed further round about this island to look if there was any more convenient place. Upon the highest mountain of the island they saw 35 persons, who were very tall, and had staves or clubs. These people called to them in a strong rough voice. When they walked, they took very large strides. On other parts of the island a few people were seen here and there, which, with those

already mentioned, were thought to be all or nearly all the inhabitants of the island. Our people saw no trees, nor did they observe any cultivated land, except that near the fresh water there were some square plots of ground, green, and very pleasant; but of what kind the greens were they could not distinguish. Two canoes were drawn up on the shore.

"In the evening we anchored in 40 fathoms, good ground, a musket-shot distant from the island (on the north side).

"The 6th, in the morning, we put water-casks in the two boats, and sent them to the shore. As they rowed towards the land, they saw tall men standing in different places, with long staves like pikes in their hands, who called to our people. There was much surf at the watering place, which made landing difficult; and between a point of the island and another very high cliff, or little island, the current ran so strong against the boats that they could scarcely stem it: for which reasons the officers held counsel together, and not being willing to expose the boats and the people, they returned to the ships. Before we saw them coming back, we had fired a gun and hoisted a flag as a signal for them to return. This island we named Drie Koningen Eyland, *i.e.*, Three Kings Island (on account of this being the day of the Epiphany)."

From the number of Natives seen by Tasman, and from the fact that patches of cultivated ground were observed, we may take it for granted that the islands had permanent residents at the time of his visit. But they must have been subsequently abandoned, for all the voyagers immediately after Cook speak of them as being uninhabited; one or two, however, stating that the Maoris were in the habit of crossing from the mainland, at long intervals, to obtain young mutton-birds or gannets. In 1816, the ship *Betsey*, commanded by Captain Goodenough, was wrecked near the North Cape, and the greater portion of the crew were drowned. The survivors, nine in number, took refuge on the Three Kings, being driven from the mainland by the threatening conduct of the Maoris. They lived there for some time, and saw no appearance of the islands having been inhabited for many years past. Somewhere about 1830, however, a number of Maoris belonging to the Aopuri tribe crossed over and took up their residence on the islands. They were led by a well-known chief, who in his younger days had spent some time in a whaling vessel, and had received the nick-name of Tom Bowline. He, with his wife and immediate followers, remained on the islands for many years, and had several children born there. From a paragraph in the "Missionary Register" for 1836, it appears that the Rev. Mr. Puckey visited the Three Kings in October, 1835, being induced to go there through hearing a report that the inhabitants were starving. He found them almost in a state of destitution, and offered to bring them

away, but they decided not to leave their homes. I have been unable to obtain the date of Tom Bowline's departure, but he eventually left the island, and took up his residence in a little bay to the west of the North Cape, which still bears on our charts the name of Tom Bowline's Bay. Since his time, I believe that no one has lived on the islands, and casual visitors have been very few indeed.

A short time ago the title to the Three Kings became the subject of an investigation by the Native Lands Court. Judge Monro, who presided when the case was heard, has very kindly furnished me with notes of the evidence that was taken. According to Wiremu Kurukuru, who claimed the islands as the representative of Tame Porena (Tom Bowline), the Three Kings were originally inhabited by a race of people differing in some respects from the Maoris. The tribe numbered about a hundred, and its principal chief was called Toumaramara. A chief of the Aopuri called Taiakiaki invaded the islands, and a battle was fought, which resulted in the death of Toumaramara and all his people, with the exception of one woman called Te Poinga. Taiakiaki did not remain on the islands; but one of his sons called Tongahake very frequently crossed over from the mainland. He died on the Great King, and was buried there. His daughter, called Turangakahu, married Tom Bowline, and accompanied him when he crossed over to reside on the islands. She had four daughters born there, and they were all adults when Tom Bowline returned to the mainland. Another witness, called Herepeti Kingi, who claimed to be a lineal descendant of Toumaramara, denied that that chief and his people were destroyed by Taiakiaki, but the balance of the evidence appears to be against him. Rewiri Kaiwaka, a Ngapuhi native, stated that his father conveyed Tom Bowline to the islands. He did not remain with him, but returned, after obtaining some birds and some goat-skins. The goats had been placed there a little while before by some Europeans. He used the skins to make sails for his canoes.

Mr. Percy Smith informs me that some Aopuri natives state that the original owner of the Three Kings was a chief called Rauru. This Rauru, in ages long past, swam across to the islands from the mainland, and, being much exhausted and out of breath when he landed, called the place "Manawa-tawhi," which, being translated, means "panting breath." This name it has retained up to the present time. It seems very desirable that the Maori traditions respecting the islands should be collected by some qualified person before they disappear.

The Three Kings may some day be occupied as a fishing-station, but it is difficult to imagine what other use could be made of them. They are quite unsuited for cultivation, very difficult of access, and landing is more often dangerous than

not. Probably many years will elapse before the peculiar plants and birds are in any way interfered with by human residents.

DESCRIPTIONS OF THE NEW SPECIES.

1. *Pittosporum fairchildi*, n. sp.

A small tree, 8–15 feet in height; branches rather slender, bark brownish. Young branchlets and peduncles more or less covered with whitish tomentum, which gradually disappears as they mature. Leaves entire, alternate, often crowded, variable in shape, obovate, elliptic-obovate, or elliptic-oblong, 2–4 inches long, obtuse or acute, gradually narrowed into short stout petioles, coriaceous, bright-green and glossy above, paler below, margins flat, veins finely reticulated, covered with silky white hairs when young, but quite glabrous when old. Flowers purplish, $\frac{1}{2}$ inch long, in terminal 2–4-flowered fascicles, pedicels rather long, slender, decurved. Sepals linear-oblong, acute, tomentose. Petals much larger, recurved. Capsules terminal, 3-valved, $\frac{3}{4}$ –1 inch in diameter, depressed, broader than long, glabrous, even when half-grown, valves hard and woody, dark-brown, very finely wrinkled and pitted.

I have named this fine species after Captain Fairchild, of the s.s. *Stella*, through whose kindness I was enabled to land on the islands. It is allied to *P. crassifolium* and *P. umbellatum*. From the first it differs in the broader flat leaves, which are quite glabrous when mature, and in the capsule, which is smaller and much broader and flatter, besides being glabrous when comparatively young. From *P. umbellatum* it can at once be distinguished by the silky tomentose young leaves and branchlets, less numerous flowers, and by the much larger differently-shaped capsule.

2. *Coprosma macrocarpa*, n. sp.

A robust, leafy, glossy-green shrub, 5–12 feet in height, quite glabrous in all its parts; bark dark greyish-brown. Leaves coriaceous, but hardly so much so as in *C. robusta*, large, 4–7 inches long, $1\frac{1}{2}$ – $3\frac{1}{2}$ inches broad, ovate-oblong or elliptic-oblong, acute or apiculate, rather suddenly narrowed into a short stout petiole, margins thickened; veins conspicuous, very finely reticulated. Stipules large, on the young leafy shoots often sheathing the branch for some distance. Flowers not seen. Fruit much the largest of the genus, very abundantly produced, in axillary fascicles of 3–7, $\frac{1}{2}$ –1 inch long, broadly ovoid or oblong, or sometimes nearly orbicular, not seen perfectly ripe.

A very distinct plant, at once recognised by the large fruit, which is more than twice the size of that of *C. grandifolia* or *C. robusta*, which are its nearest allies. The leaves are often as

large as those of *C. grandifolia*, but they have more the shape and texture of those of *C. robusta*, and they dry a brownish-black as in that species. The average length of the fruit is about $\frac{3}{4}$ inch, but some specimens were observed over an inch. The flowering season was past at the time of our visit, but judging from the arrangement of the berries, the inflorescence must resemble that of *C. grandifolia*, with shorter peduncles and fewer flowers.

3. *Paratrophis (Uromorus) smithii*, n. sp.

A small tree, 10–15 feet high, with milky juice, perfectly glabrous in all its parts; branches long, slender, straggling; bark brown, rough, with raised lenticles. Leaves shortly petiolate, alternate, entire, 5–9 inches long, 2–4 inches broad, ovate-oblong, oblong-elliptical or almost ovate, obliquely cordate at the base, sub-coriaceous, obtuse or obtusely acuminate, veins conspicuous, penninerved. Stipules small, lanceolate, very deciduous. Spikes simple or bifid, axillary, 2–5 inches long, only females seen, and those with the flowers not quite fully developed. Flowers apparently arranged in two irregular rows on each side of the spike, numerous, minute, mixed with peltate scales. Perianth 4-partite to the base; leaflets broadly ovate, obtuse, imbricate. Ovary sessile, ovoid, exserted beyond the perianth. Style divided to the base into two linear stigmatic branches. Fruit a drupe, enclosed at the base in the slightly enlarged persistent perianth, globose, $\frac{1}{3}$ -inch long, bright red. Seed solitary, pendulous.

A singular species, which I have dedicated to my fellow-traveller, Mr. Percy Smith. Technically, it falls into the genus *Paratrophis*, as defined by the authors of the "Genera Plantarum," the type of which is the plant well known to New Zealand botanists under the name of *Epicarpurus microphyllus*. *P. smithii*, however, belongs to a section of the genus called *Uromorus*, which was originally constituted as a distinct genus by Bureau, in his monograph of the order (De Candolle's "Prodromus," vol. xvii.). Three species of the section are known: one from the Fiji Islands, one from Tahiti, and the third from the Philippines. Ours is very distinct from all.

4. *Davallia*, sp.

Rhizome stout, wide-creeping, densely clothed with pale chestnut-brown subulate cobwebby scales. Stipes stiff, smooth, 3–6 inches long. Frond 4–12 inches long, 3–8 inches broad, deltoid or rhomboid, tri- or quadripinnatifid, very coriaceous, quite glabrous. Primary pinnae ovate-deltoid, acuminate; secondary narrower; pinnules lanceolate, cut down nearly to the base into 3–5 pairs of segments. Sori numerous, narrow cup-shaped, sunk in the top of the teeth, usually with a projecting horn on the outer side.

This is evidently closely allied to the Australian and Norfolk Island *D. pyxidata*, and but for the fact that my specimens hardly match an Australian specimen of *D. pyxidata* in my herbarium, I should have considered them to be the same. As it is, I leave the species unnamed until a more complete comparison can be made.

CATALOGUE OF PLANTS OBSERVED ON THE THREE KINGS ISLANDS.

1. *Clematis indivisa*, Willd.
2. *Clematis parviflora*, A. Cunn.
3. *Cardamine hirsuta*, L.
4. *Melicytus ramiflorus*, Forst.
5. *Hymenanthera latifolia*, Endl.
6. *Pittosporum fairchildi*, n. sp.
7. *Spergularia rubra*, Pers.
8. *Oxalis corniculata*, L.
9. *Melicope ternata*, Forst.
10. *Coriaria ruscifolia*, L.
11. *Haloragis alata*, Jacq.
12. *Haloragis depressa*, Hook. f.
13. *Leptospermum scoparium*, Forst.
14. *Leptospermum ericoides*, A. Rich.
15. *Metrosideros tomentosa*, A. Cunn.
16. *Metrosideros scandens*, B. and S.
17. *Sicyos angulatus*, L.
18. *Mesembryanthemum australe*, Sol.
19. *Hydrocotyle heteromera*, D.C.
20. *Hydrocotyle novæ-zealandiæ*, D.C.
21. *Apium australe*, Th.
22. *Angelica rosæfolia*, Hk.
23. *Corokia cotoneaster*, Raoul.
24. *Coprosma macrocarpa*, n. sp.
25. *Coprosma grandifolia*, Hk. f.
26. *Coprosma baueriana*, Endl.
27. *Coprosma robusta*, Raoul.
28. *Lagenophora forsteri*, D.C.
29. *Gnaphalium involucratum*, Forst.
30. *Gnaphalium collinum*, Lab.
31. *Senecio lautus*, Forst.
32. *Sonchus oleraceus*, L.
33. *Wahlenbergia gracilis*, A. Rich.
34. *Colensoa physaloides*, Hk. f.
35. *Lobelia anceps*, Thunb.
36. *Leucopogon frazeri*, A. Cunn.
37. *Myosotis spathulata*, Forst.

38. *Convolvulus sepium*, L.
 39. *Convolvulus tuguriorum*, Forst.
 40. *Dichondra repens*, Forst.
 41. *Pisonia brunoniana*, Endl.
 42. *Muhlenbeckia complexa*, Meisn.
 43. *Tetranthera calicaris*, Hk. f.
 44. *Hedycarya dentata*, Forst.
 45. *Pimelea prostrata*, Vahl.
 46. *Paratrophis smithii*, n. sp.
 47. *Parietaria debilis*, Forst.
 48. *Peperomia urvilleana*, A. Rich.
 49. *Piper excelsum*, Forst.
 50. *Acianthus sinclairii*, Hk. f.
 51. *Microtis porrifolia*, Spr.
 52. *Thelymitra longifolia*, Forst.
 53. *Cordyline australis*, Hk. f.
 54. *Dianella intermedia*, Endl.
 55. *Arthropodium cirrhatum*, Br.
 56. *Phormium tenax*, Forst.
 57. *Scirpus nodosus*, Rottb.
 58. *Cladium teretifolium*, Br.
 59. *Uncinia australis*, Br.
 60. *Carex paniculata*, L., var. *virgata*.
 61. *Carex testacea*, Sol.
 62. *Carex breviculmis*, Br.
 63. *Panicum imbecille*, Forst.
 64. *Echinopogon ovatus*, Pal.
 65. *Arundo conspicua*, Forst.
 66. *Poa anceps*, Forst.
 67. *Cyathea medullaris*, Swz.
 68. *Davallia*, sp.
 69. *Adiantum affine*, Willd.
 70. *Adiantum hispidulum*, Swz.
 71. *Pteris tremula*, Br.
 72. *Pteris aquilina*, L.
 73. *Pteris comans*, Forst.
 74. *Lomaria acuminata*, Baker.
 75. *Lomaria procera*, Spr.
 76. *Doodia media*, Br.
 77. *Asplenium obtusatum*, Forst.
 78. *Asplenium flaccidum*, Forst.
 79. *Aspidium richardi*, Hook.
 80. *Polypodium serpens*, Forst.
 81. *Polypodium billardieri*, Br.
 82. *Lycopodium volubile*, Forst.
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