

1929.
NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.

SCENERY - PRESERVATION.

REPORT FOR THE YEAR ENDED 31st MARCH, 1929, TOGETHER WITH STATEMENT OF ACCOUNTS
AND SCHEDULE OF LANDS ACQUIRED AND RESERVED DURING THE YEAR UNDER THE
SCENERY PRESERVATION ACT.

*Presented to both Houses of the General Assembly pursuant to Section 17 of the Scenery Preservation
Act, 1908.*

Department of Lands and Survey, Wellington, 31st July, 1929.

SIR—

I have the honour to submit herewith a report on scenery-preservation for the year ended
31st March, 1929.

I have, &c.,

J. B. THOMPSON,

Under-Secretary for Lands.

The Hon. G. W. Forbes, Minister in Charge of Scenery-preservation, Wellington.

REPORT.

PROCLAMATIONS issued during the year setting land apart as scenic or historic reserves under the provisions of the Scenery Preservation Act covered a total area of 42,436 acres. This includes some 14,502 acres in Westland (formerly portions of provisional State forests), for the reservation of which for scenic purposes it was necessary to obtain the authority of the special legislation enacted as section 14 of the Reserves and other Lands Disposal Act, 1928.

In the North Auckland Land District an area of 52 acres 2 roods 24.5 perches, comprising portion of the Okuratope No. 2 Block, was acquired from the Native owners, and a further area of 3 acres 1 rood 12.6 perches was purchased from European owners to give access to the block. On this area was situated the well-known Okuratope Pa, which was occupied by Hongi at the time of Marsden's visit to New Zealand in 1817. The earthwork of the pa is fairly well preserved, although the palisading has mostly disappeared. There is a good deal of native bush, and apart altogether from its historic interest the block has considerable scenic value. After the area had been acquired it was discovered that a small *tapu* area had inadvertently been included within its boundaries. Arrangements were therefore made to revest this particular portion of 1 rood 36 perches in the Natives, and a Proclamation was issued accordingly. It is proposed to appoint a special Board in due course to control the reserve.

The Trounson Kauri Park, of 1,080 acres, was also proclaimed during the year. Further reference to this area is made in Appendix E of this report.

A Proclamation was issued reserving Hen (or Taranga) Island, situated to the north of Hauraki Gulf. This particular island has had a somewhat chequered career in regard to the matter of reservation. It was originally set apart in 1883 as a reserve for lighthouse purposes, while by section 4 of the Reserves and other Lands Disposal and Public Bodies Empowering Act, 1920, it was declared, together with the adjacent Chicken Islands, to be reserved for scenic purposes. In 1927 it was discovered that Hen Island was freehold land vested in the late Thomas Outhwaite, whose daughter devised the island to the Government absolutely in the hope that it would be used as a bird-sanctuary. The previous dealings with the island by the Crown were *ultra vires*, and upon receipt of the Crown's title in terms of the will of the late Miss Outhwaite the opportunity was taken to place matters on a proper footing by the issue of a Proclamation setting the island apart under the provisions of the Scenery Preservation Act. The island thereupon automatically became a bird-sanctuary.

The fourth reservation in North Auckland during the year concerned two areas, of 100 acres and 20 acres 3 roods respectively, adjoining the Kai Iwi Lakes. It is proposed later on to reserve a fairly large area of Crown land in the vicinity. These areas are situated near the sea-beach north-west from Dargaville, and about nine miles from Kauri Park. The lakes themselves are very beautiful, possessing magnificent foreshores of white sand, and it is anticipated that the locality will become a popular resort in the future.

Reservations in the Wellington District included the acquisition of a small area for the purpose of improving the access to the Silverstream Reserve in the Hutt Valley, and the setting-aside of four bush areas in the Hautapu Survey District, in the vicinity of Omatane and Ruahine.

In the Nelson Land District, Lake Rotoroa, together with a large area of the surrounding country, was set aside for scenic purposes. Some of the land surrounding the lake had previously been set apart; but the lake itself had not been dealt with, and its reservation, together with that of additional surrounding areas, should meet with general approval. The lake is a noted beauty-spot, and bird-life is abundant both on the lake itself and in the adjacent forests. Other reservations were those of some 178 acres of bush-clad slopes at the junction of the Owen and Buller Rivers, and 261 acres of bush in the Buller Gorge on the opposite side of the river from the main coach-road.

An area of 870 acres at Penguin Bay, Pelorus Sound, was acquired and set apart during the year. This area, which was formerly held on small-grazing-run lease, is mostly in bush, and adjoins other areas already reserved for scenic purposes in the locality.

In the Westland District areas totalling 14,502 acres situated along the Main South Road from Waiho to Weheka, and in the neighbourhood of the Fox Glacier, were set apart as scenic reserves under the provisions of section 14 of the Reserves and other Lands Disposal Act, 1928. These areas were portions of provisional State forests; but the bush contains timber of little commercial value, and the State Forest Service agreed to the change of purpose of the reservation. The forest on the land is of considerable interest from a scenic point of view. An area of 198 acres near Lake Ianthe was also set apart during the year. This particular area was formerly reserved for the accommodation of travelling stock, but was no longer required for that purpose on account of a more suitable stock-paddock having been provided in the locality.

Lakes Tennyson and Guyon, in the Amuri County, North Canterbury, were proclaimed under the Scenery Preservation Act. These lakes are situated in very rough and inaccessible country, but will no doubt be appreciated at their true worth in future years.

An area of 51 acres adjoining the Samson Hill Scenic Reserve, South Otago, was acquired during the year as an addition to the reserve. This particular area formed portion of three sections held under occupation-with-right-of-purchase licenses from the Crown, and no compensation was asked for by the licensees other than to have a *pro rata* reduction made in their rentals. The Samson Hill forms an exceptionally beautiful piece of scenery, and the additional area now reserved will add considerably to its value.

In the Southland District a small piece of closed road was reserved and placed under the control of the Tuatapere Scenic Board, while 12 acres at Curio Bay, situated between high- and low-water marks, was declared a reserve under the Act. This latter area embraces a submerged forest, and contains some very fine specimens of petrified trees. An adjoining area of 13 acres on the mainland was reserved some years ago.

The revocation of the scenic reservation over areas totalling some 588 acres was arranged during the year. The cases dealt with were those of the small portion of the Okuratope Pa, referred to in an earlier paragraph; portion of the Waihi Falls Reserve, in the Weber District; an area of 16 acres on the Ohura Road, near Whangamomona; and part of the Blackcleugh Reserve, on the Clutha River. In the case of the Ohura Road reserve, the land dealt with carried poor bush of little scenic value, and arrangements have been made to allot the area to the adjoining holder in order to provide a practicable fencing-line. In the Blackcleugh case, an area of 504 acres has been handed over to the State Forest Service, which is planting on the adjoining land.

The total number of scenic reservations in the Dominion is now 827, covering a total area of over 505,000 acres.

SUPERVISION OF RESERVES.

During the year special Scenic Boards were appointed or reappointed as follows: The Matamata County Council to control the Maungatautari Mountain Reserve; Te Kuiti Borough Council to control the Mangaokewa Gorge Reserve; Ohakune Borough Council to control the Ohakune Reserve; Taumarunui Borough Council to control Lot A, Block I, Hunua Survey District; and the Parr's Park, Waima, Lake Rotoiti, Motu, Taihape, and Pongaroa Scenic Boards to control their respective reserves.

Two warrants were issued placing additional areas under the control of the Lake Rotoiti and Tuatapere Scenic Reserves Boards respectively.

Appointments of honorary inspectors were made as follows: Mr. W. Hickey, for the Waiotapu Scenic Reserve Extension; Messrs. J. M. Scott, G. Middleton, C. R. Dean, W. Walker, and F. O. Kurth, for the Maungatautari Mountain Reserve; Mr. J. Robertson, for the Te Arai Reserve; Mr. A. J. Duncan, for the Elsthorpe Reserve; Mr. J. Guthrie, for Scenic Reserves Sections 12, 12A, and 42, Block XV, Hautapu Survey District, Wellington Land District; Mr. H. Leov, for scenic reserves in French Pass, Wangamoa, and D'Urville Survey Districts, Nelson Land District; Messrs. H. R. Dix, N. G. Parker, G. J. Leech, J. C. M. Greensill, C. H. Jackson, and H. Leov, for all scenic reserves in that part of the Sounds County situated in the Marlborough Land District; Messrs. W. N. Masfield and E. A. W. Moore, for the Mangamaunu Scenic Reserves; Mr. F. R. Woodham, for the Saltwater Lagoon Reserve; Mr. I. McLellan, for all scenic reserves in the Fiord County situated in the Southland Land District; and Messrs. R. Hamilton, J. R. Haigh, and W. F. Sutton for the Curio Bay Reserve.

Good work is being carried out by the members of the special Scenic Boards appointed to control various reserves, and the Department is anxious to arrange for further appointments in suitable cases. The system of appointing honorary inspectors is also proving most satisfactory, and it is proposed to make additional appointments from time to time. Many inspections have also been made during the year by officers of the Department.

DAMAGE TO RESERVES, AND TRESPASS THEREON, ETC.

The inspections carried out during the year, and the reports supplied by Scenic Boards and honorary inspectors, have shown that the bulk of our scenic reserves are in good order and condition. No doubt some poaching of timber occurs now and again in various localities, as well as a certain amount of unauthorized grazing; but the public as a rule recognize that scenic reserves have been set apart for the benefit of the Dominion, and should be preserved in their natural beauty.

A conviction was secured in a case where an adjoining settler had cut and removed a small amount of fencing-material from a scenic reserve, and also in a case of allowing horses to trespass on a reserve.

GENERAL.

In connection with the setting-aside of Lake Rotoroa, as referred to in an earlier paragraph, mention may be made of certain difficulties experienced in the administration of this reserve. The lake provides the easiest means of access to the Sabine and D'Urville Rivers, which are favourite resorts of deer-stalkers. These rivers have, it is understood, been stocked from time to time with rainbow trout-fry by the Nelson Acclimatization Society, with the object of ultimately stocking the lake with trout. In connection with these activities it has been the custom of the society in the past to periodically destroy the shags and their nests around the shores of the lake. Now, however, that the lake itself, as well as the surrounding country, is a scenic reserve it is an offence punishable by a fine not exceeding £100 for any one to kill or take any birds or native or imported game on the reserve, or to carry or discharge any firearm thereon. The society protested to the Department against the lake being declared a sanctuary (by virtue of the scenic Proclamation), and intimated that it intended granting permits to its members to destroy the shags. The representations made were carefully considered, and the Department also obtained the opinion of the Chief Inspector of Fisheries on the matter. That officer concurred in the conclusion arrived at by the Department that in the case of Lake Rotoroa there was no justification for authority being granted for the destruction of the shags, pursuant to the powers in that behalf conferred on the Minister by section 2 of the Scenery Preservation Amendment Act, 1926. The Department therefore refused to recommend the issue of permits for the destruction of the shags, and the society was advised accordingly, its attention being drawn also to the provisions of the Scenery Preservation Acts with regard to any unauthorized carrying or discharging of firearms on a scenic reserve. If in the future a thorough scientific investigation proves clearly that the shags at Lake Rotoroa are the menace that they are alleged by certain interests to be, then the Department would review the position; but on the evidence now available the proper course is to refuse any applications for permission to destroy the birds.

As stated in last year's report, the public interest in our scenic reserves is rapidly increasing. This is wholly to the good, as a wider knowledge on the part of the general public of the beauties of the native bush and other scenic attractions must result in a stronger desire for their proper protection and maintenance. But the fact that any area has been set aside as a scenic reserve is not of itself a reason, as many appear to think, why it should be thrown open to public use without any restrictions whatever, and camping thereon allowed as a right. There is no inherent right vested in the public to camp on scenic reserves, and indeed in a great many cases it would be most inadvisable to grant any permission in that respect. The Department recognizes, however, that certain scenic reserves are suitable for camping purposes, and where conditions are favourable it does not propose to unduly restrict the use of such reserves.

There is another point in connection with the administration of scenic reserves that calls for mention. Many reserves are on the border-line between recreation areas and scenic reserves pure and simple. What is to be done in such cases? The Department feels that it would be failing in its duty to the general public if such areas were regarded too strictly as scenic areas to be kept absolutely in their natural state. It therefore permits certain improvements to be carried out, such as the grassing of small areas of flat and sunny slopes in cases where the land is in fern or rubbish, and other work likely to add to the attractiveness of the reserve from a recreation point of view. It is possible that in the future it may be found necessary or desirable to administer reserves of this nature as public domains under the provisions of the Public Reserves, Domains, and National Parks Act; but no move in that direction has as yet been made.

It is with pleasure that the Department publishes as an appendix to this report an article by Dr. L. Cockayne, C.M.G., F.R.S., on the vegetation and flora of the Rainbow Mountain Scenic Reserve. In former years Dr. Cockayne contributed many valuable and interesting botanical articles for publication by the Department. His reports in 1907, 1908, and 1909 on botanical surveys of Kapiti Island, Waipoua Kauri Forest, Tongariro National Park, and Stewart Island are exceedingly well known as valuable contributions to botanical science, and the Department hopes to be able to publish further contributions from his pen from time to time.

APPENDICES.

The appendices to this report are listed hereunder :—

- A. Schedule of reserves made and reservations revoked during the year, accompanied by statement of expenditure.
 - B. Report of the Scenery Preservation Board.
 - C. The Vegetation and Flora of Rainbow Mountain (Dr. L. Cockayne, C.M.G., F.R.S.)
 - D. Kapiti Island.
 - E. Notes on Trounson Kauri Park.
 - F. Cape Kidnapper Bird-sanctuary.
 - G. Report of the New Plymouth Scenic Reserves Board.
 - H. Taranaki Scenic Reserves.
 - I. Marlborough Scenic Reserves.
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APPENDICES.

APPENDIX A.

RESERVES MADE IN 1928-29 UNDER THE SCENERY PRESERVATION ACT, 1908, AND AMENDMENTS.

Recom- mendation No.	Local Name.	Description.	Area.	Date of Proclamation.
<i>North Auckland Land District.</i>				
			A. R. P.	
574	Okuratope Pa	{ Part Okuratope No. 2 Block	52 2 24.5	13/4/28
		{ Part Lot 1 on D.P. 7001	2 0 24.3	13/4/28
		{ Part Sub. 1, O.L.C. 55	1 0 12.5	13/4/28
		{ Part Okuratope No. 1 Block, Block VIII, Omapere S.D.	0 0 15.8	13/4/28
521	Trounson Kauri Park	Section 33 Block XI, Waipoua S.D. ..	1,080 2 16	31/7/28
631	.. ..	Taranga, or Hen Island	1,175 0 0	27/8/28
598	Kai-Iwi Lakes	{ Section 4, Block I, Kai-Iwi S.D. ..	100 0 0	15/12/28
		{ Section 17, Block I, Kaihu S.D. ..	20 3 0	15/12/28
<i>Wellington Land District.</i>				
620	Silverstream (addition)	Lot 3, D.P. 8202, part Section 196, Hutt District, Block IV, Belmont S.D. ..	0 1 0.3	15/5/28
647	Omatane	Section 17, Block VIII, Hautapu S.D. ..	12 0 0	20/8/28
646	Mangawharariki	{ Section 12A, Block XV, Hautapu S.D. ..	11 2 0	3/9/28
		{ Section 42, Block XV, Hautapu S.D. ..	43 0 0	14/9/28
		{ Section 12, Block XV, Hantapu S.D. ..	89 1 0	3/9/28
<i>Nelson Land District.</i>				
640	} Buller Gorge	{ Section 10, Block VII, Matiri S.D. ..	178 0 0	20/8/28
642		{ Section 2, Block VII, Matiri S.D. ..	261 0 0	20/8/28
639	Lake Rotoroa	Situated in Blocks II, III, VI, VII, X, and XI, Rotoroa S.D. ..	23,150 0 0	1/10/28
<i>Marlborough Land District.</i>				
607	Penguin Bay	Section 5, Block VIII, Oriieri S.D. ..	870 0 0	7/6/28
<i>Westland Land District.</i>				
643	Fox Glacier (vicinity)	{ Situated in Blocks IX, X, XIII, XIV, and XV, Waiho, and I, Mount Cook S.D.s ..	14,120 0 0	(a)
		{ Situated in Blocks XI, XII, and XV, Wai- taha S.D. ..	375 0 0	(a)
645	Lake Ianthe (addition)	{ Situated in Block XI, Waiho S.D. ..	7 2 20	(a)
		{ Portion of Reserve 363, Block III, Mount Bonar S.D. ..	198 1 16	12/9/28
<i>Canterbury Land District.</i>				
635	Lake Tennyson	Reserve No. 4222, Blocks IV and VIII, Maling S.D. ..	590 0 0	3/9/28
635	Lake Guyon	Reserve No. 4223, Blocks XIV and XV, Maling S.D. ..	165 0 0	3/9/28
<i>Otago Land District.</i>				
636	Samson Hill (addition)	Parts of Sections 2, 3, and 4, Block XII, Tautuku S.D. ..	51 3 26	15/2/29
<i>Southland Land District.</i>				
637	Curio Bay	Section 19, Block VIII, Waikawa S.D. ..	12 0 0	20/8/28
638	Tuatapere (addition)	Section 6R, Block II, Alton S.D. ..	1 2 32	30/11/28

(a) Section 14 of Reserves and other Lands Disposal Act, 1928.

REVOCATION OF RESERVATIONS.

Land.	Area.	Date of Proclamation.
<i>North Auckland Land District.</i>		
	A. R. P.	
Portion of Okuratope No. 2 Block, Block VIII, Omapere S.D. (portion of Okuratope Pa Scenic and Historic Reserve)	0 1 36	11/1/29
<i>Hawke's Bay Land District.</i>		
Section 11 (part Waihi Falls Scenic Reserve), Block XVI, Weber S.D.	68 2 30	15/2/29
<i>Taranaki Land District.</i>		
Subdivision 1 of Section 19, Block I, Mahoe S.D.	16 1 3	(a)
<i>Otago Land District.</i>		
Section 21, Block VIII, Rankleburn S.D.	504 0 0	(b)
	589 1 29	

(a) Item No. 3 in the schedule to the Reserves and other Lands Disposal Act, 1928.

(b) Section 20 of the Reserves and other Lands Disposal Act, 1928.

SUMMARY OF RESERVES.

District.						Number.	Area.		
							A.	R.	P.
North Auckland ..	..	..	..	..	..	5	2,432	1	13.1
Wellington ..	..	..	..	..	..	5	156	0	0.3
Nelson ..	..	..	..	..	..	3	23,589	0	0
Marlborough ..	..	..	..	..	..	1	870	0	0
Westland ..	..	..	..	..	..	4	14,700	3	36
Canterbury ..	..	..	..	..	..	2	755	0	0
Otago ..	..	..	..	..	..	1	51	3	26
Southland ..	..	..	..	..	..	2	13	2	32
Totals ..	..	..	..	..	..	23	42,568	3	27.4
Reserved up to 31st March, 1928 ..	..	..	..	..	..	806	464,203	3	4.7
						829	506,772	2	32.1
Less reservations revoked and area (Hen Island) included in previous return						2	1,764	1	29
						827	505,008	1	3.1

STATEMENT SHOWING EXPENDITURE ON SCENERY-PRESERVATION FOR THE YEAR ENDED 31st MARCH, 1929.

	£	s.	d.
Fencing Whinray Park, Gisborne	62	0	0
Grant to Peel Forest Park Board	50	0	0
Kai Iwi Lakes, acquisition of land at	141	10	0
Kawhia Harbour Scenic Reserve, acquisition of	70	0	0
Kumutoto Scenic Reserve, Marlborough (improvements)	90	5	0
Native Land Settlement Account—			
Capital value of Section 5, Block XXIV, Waiau (Putere Block)	60	0	0
Part cost of area acquired at Lake Waikaremoana for scenic and water-conservation purposes	10,274	0	0
Ngongotahi Scenic Reserve—Compensation for 250 acres taken for scenic purposes	875	0	0
Okuratope Pa, acquisition of	13	0	0
Protection of historical pohutukawa-trees at Kawhia	299	5	0
Scenery Preservation Board, expenses of	0	18	9
Section 62s, Manaia Parish, contribution towards acquisition of	50	0	0
Summit Road Scenic Reserve—Ranger	150	0	0
Surveys, valuations, and incidental expenses	538	10	9
Trounson's Kauri Forest—			
Charges in connection with protection of	641	18	9
Road access	100	0	0
Waipu Scenic Reserve	158	0	0
Administration of reserves and historic spots (including fencing, &c.)—			
Eradication of noxious weeds	428	6	1
Fencing	112	2	3
Repairs to bridge	25	0	0
Planting pohutukawa-trees on Pelorus Sound Reserve	1	4	0
		566	12 4
Gross expenditure for year	14,141	0	7
Recoveries	1	17	0
Net expenditure	£14,139	3	7

COMPARISON OF EXPENDITURE.

It is interesting to note how money raised under the Act or provided from other sources has been expended. It will be seen that the cost of administration has been reduced to a very small proportion of the total expenditure.

Year.	Compensation for Land.	Fencing and Maintenance.	Surveys, Valuations, &c.	Board's Expenses.	Salaries.	Total.
	£	£	£	£	£	£
1904-5	216	Nil	52	1,822	*	2,090
1905-6	3,336	„	527	1,221	*	5,084
1906-7	7,856	304	801	185	*	9,146
1907-8	4,286	382	555	86	175	5,484
1908-9	3,813	1,063	540	24	325	5,765
1909-10	1,688	1,159	2,603	Nil	325	5,775
1910-11	1,066	685	1,643	11	325	3,730
1911-12	2,619	715	2,237	22	345	5,938
1912-13	12,997	798	2,697	6	345	16,843
1913-14	10,467	627	1,547	3	365	13,009
1914-15	6,253	758	476	12	388	7,887
1915-16	1,530	698	104	6	390	2,728
1916-17	252	836	76	1	390	1,555
1917-18	428	602	114	3	390	1,537
1918-19	1,295	1,964†	49	1	280	3,589
1919-20	510	188	12	..	40	750
1920-21	3,031	471	299	..	25	2,825
1921-22	57,768	227	224	..	25	58,244
1922-23	6,306	377	290	..	25	6,998
1923-24	1,488	118	1,589	..	25	3,210
1924-25	1,158	1,565	240	..	18	2,981
1925-26	17,923	2,310	305	9	..	20,547
1926-27	2,617	1,182	75	17	..	3,891
1927-28	5,182	1,342	58	17	..	6,599
1928-29	11,642	1,810	538	1	150‡	14,141
Grand total ..	..	..	..	..	..	210,346

* Included in Board's expenses.
for Summit Road Scenic Reserves.

† Includes £1,750 paid to Summit Road Scenic Reserve Board.

‡ Ranger

It must be noted that the above expenditure does not include expenses of raising loans and recoupment of interest, &c.

APPENDIX B.

REPORT OF THE SCENERY PRESERVATION BOARD.

THE Scenery Preservation Board comprises the following members: The Surveyor-General (Chairman); the General Manager, Department of Tourist and Health Resorts; the Under-Secretary, Native Department; and the Commissioner of Crown Lands for the district within which the lands being dealt with are situated.

Meetings were held in the office of the Surveyor-General, Wellington, on the 19th May, 1928 (Auckland); 27th June, 1928 (North Auckland, Hawke's Bay, Nelson, Westland, Canterbury, Otago, and Southland); 29th June, 1928 (Wellington); 24th August, 1928 (Auckland and Canterbury); 9th October, 1928 (North Auckland, Auckland, and Marlborough); 20th December, 1928 (Auckland, Taranaki, Gisborne, and Canterbury); and 14th March, 1929 (Auckland). A meeting was also held at Paremata (Wellington District) on the 2nd July, 1928.

Twenty-nine recommendations were submitted by the Board to His Excellency the Governor-General for the acquisition and reservation of areas of scenic and historic interest throughout the Dominion under the provisions of the Scenery Preservation Act.

The Chairman, Mr. W. T. Neill, Surveyor-General of the Dominion, retired from the Public Service on the 31st December, 1928; and the Board, at a meeting held on the 20th of that month, placed on record its regret at his retirement, its sincere appreciation of his services and unvarying courtesy and consideration, and its good wishes for his future welfare.

H. E. WALSHE,
Chairman.

APPENDIX C.

THE VEGETATION AND FLORA OF RAINBOW MOUNTAIN.

By Dr. L. COCKAYNE, C.M.G., F.R.S.

GENERAL.

UNTIL coming into the vicinity of Taupo by way of the main road from Rotorua the most imposing natural object to be admired is Rainbow Mountain, or Maungakakamea of the Maori. This remarkable monument of Nature is situated at about twenty miles from Rotorua, on the left-hand side of the famous highway, close to its junction with the Galatea Road. The mountain at once attracts attention from the extensive area of bare, much eroded clay on its north-western face (Fig. 1), deeply stained various shades of red, orange, yellow, and purple (the result of acid steam decomposing the original volcanic rock), which has led to the apt English name and makes it a special feature of the Hot Lakes District. For a considerable number of years Rainbow Mountain has been a Scenic reserve, and amongst such reserves it must ever hold a foremost place.

Now, the work of Nature, however slow it may be, never ceases, and so soon as a soil becomes fit for occupation by plant-life, such will gain a footing, so that, by degrees, a more or less dense vegetation will become established. Unfortunately, in the case of Rainbow Mountain its new vegetation, in part manuka, is encroaching on the coloured surface, so that this occupies a smaller area than formerly, while in course of time—it may be many years—the mountain will lose its specially characteristic feature. The fear of this happening before very long has raised quite natural alarm in Rotorua, and a plea has been put forth that the encroaching vegetation should be removed. To accomplish this end, even were it desirable, the only agent to hand of sufficient cheapness is fire—the “good servant but bad master.” The scrub would need cutting down, and when dry burning, as in “bush-burns.” But a manuka association, unlike rain-forest, can be burned standing provided the heat be fierce enough, and there is no telling how far the fire would spread into the reserve and destroy that remarkable and all-important vegetation which this article seeks to depict and to explain also its national value. A raging fire, too, in the vicinity of plantations raised at great cost would never be tolerated. But even supposing eradicating the “objectionable” vegetation by fire were feasible, the evil would suffer only a temporary check, for either a similar plant association would come back before very long—for manuka grows fairly fast—or one composed of noxious weeds would desecrate the famous mountain!

Not only is the mountain of interest because of its rainbow-like face, but it is now covered for its greater part with a fairly dense vegetation (Fig. 2), which, though at present pleasing enough, bids fair to become truly beautiful in the years to come. Even now, from the tourist standpoint, the plant-covering renders the mountain excellent for picnics, especially as an easy bridle-track leads to the summit, while from the track itself there are delightful views of crater-lakes surrounded by greenery (Figs. 3 and 4) and picturesque cliffs (Figs. 5 and 12), and from the summit the landscape opens out in all directions, including a fine view of Mount Tarawera and the country affected by the outburst of 1886.

At the present time perhaps the most remarkable feature of the mountain is its vegetation, which, far from being of one uniform character, shows every gradation in density and height, together with the relative abundance of its species, according to its age, such depending upon the length of time which has elapsed since the soil was too hot, the fumaroles and solfataras too active, or the ground so charged with various salts, &c., as to make its occupation by ordinary plants impossible. But this procession of events may have been more or less modified by fires—the result of man's interference.

Changes such as just mentioned, where one combination of species gives place to another, is called “succession,” and on a proper knowledge of such—knowledge as yet in its infancy—largely depends that branch of forestry known as “silviculture.” Succession, too, is a fundamental concept in regard to vegetation in general, and a true understanding of its laws would be of inestimable benefit to both pure and applied science. In this regard what is now taking place on Rainbow Mountain becomes of particular interest, since the conditions regulating the incoming of the various types of vegetation are comparatively simple, and the extremely limited number of species (barely forty), if those of the crater forest and one or two of great rarity be excluded) engaged in the work is ridiculously small. In fact—leaving the question of fires on one side—Nature might have been designing a special experiment for those botanists (botanical ecologists) who study the dwelling-places of plants and the communities which such form. To tell briefly what is happening in regard to the vegetation of Rainbow Mountain, and of what plants it is composed, is the primary object of this paper. It will also form a basis for more detailed studies, and be of importance for making comparisons at different times with the future vegetation. The list of species (certainly not complete) at the end of the paper should be of some use to those botanically inclined who may visit the mountain.

Before concluding this introduction I must express my pleasure at the invitation of the Under-Secretary of Lands and Survey, Mr. J. B. Thompson, C.B.E., to once again—after a long lapse of time—write a botanical article for publication by his Department. I must also thank Mr. E. Phillips Turner, F.R.G.S., for putting at my disposal the notes he took and the map he made of the reserve in the first decade of this century. Further, I am under considerable obligation to Messrs. W. Boardman and James Hunter, who accompanied me when visiting the mountain in February of this year and rendered valuable assistance, and I must congratulate Mr. Boardman on the excellent photographs he secured.



FIG. 1.— The north-western face of Rainbow Mountain, showing the bare coloured ground from which the mountain has received its English name.

[Photo W. Boardman.]

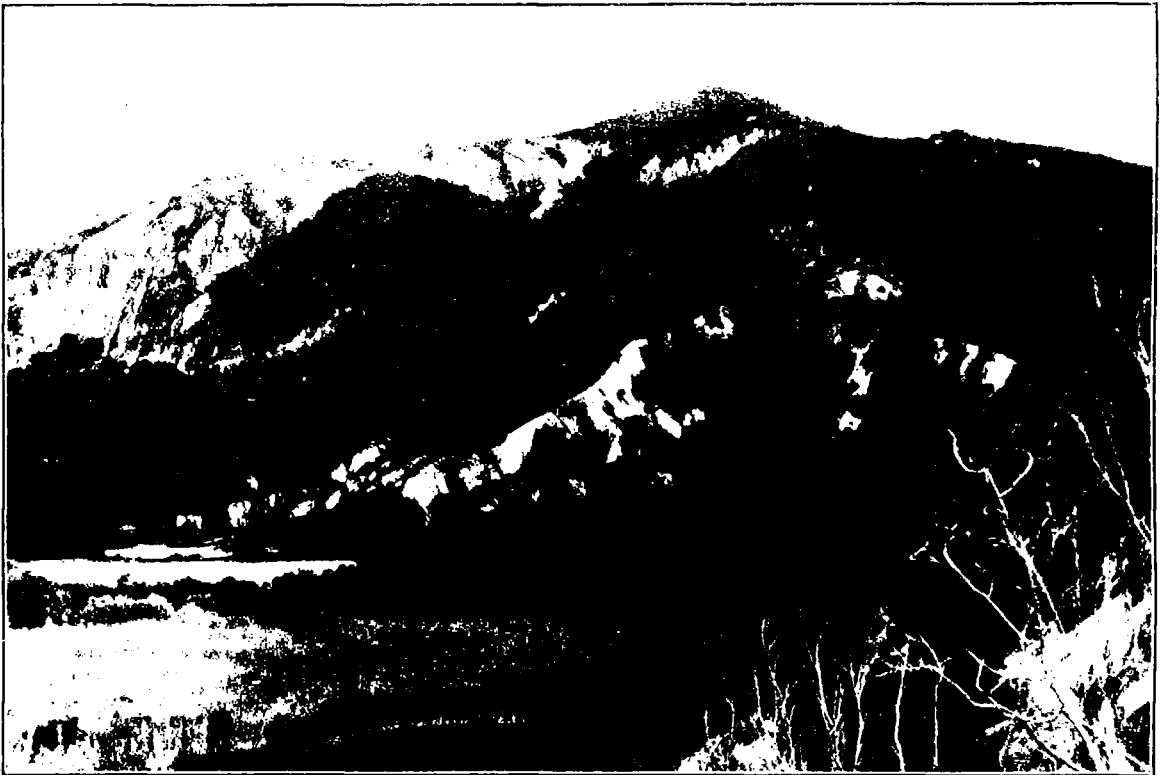


FIG. 2.— The south-western slopes of Rainbow Mountain, for the greater part clothed with aborescent vegetation. In foreground, on left, the warm crater-lake.

Face page 8.]

[Photo W. Boardman.]

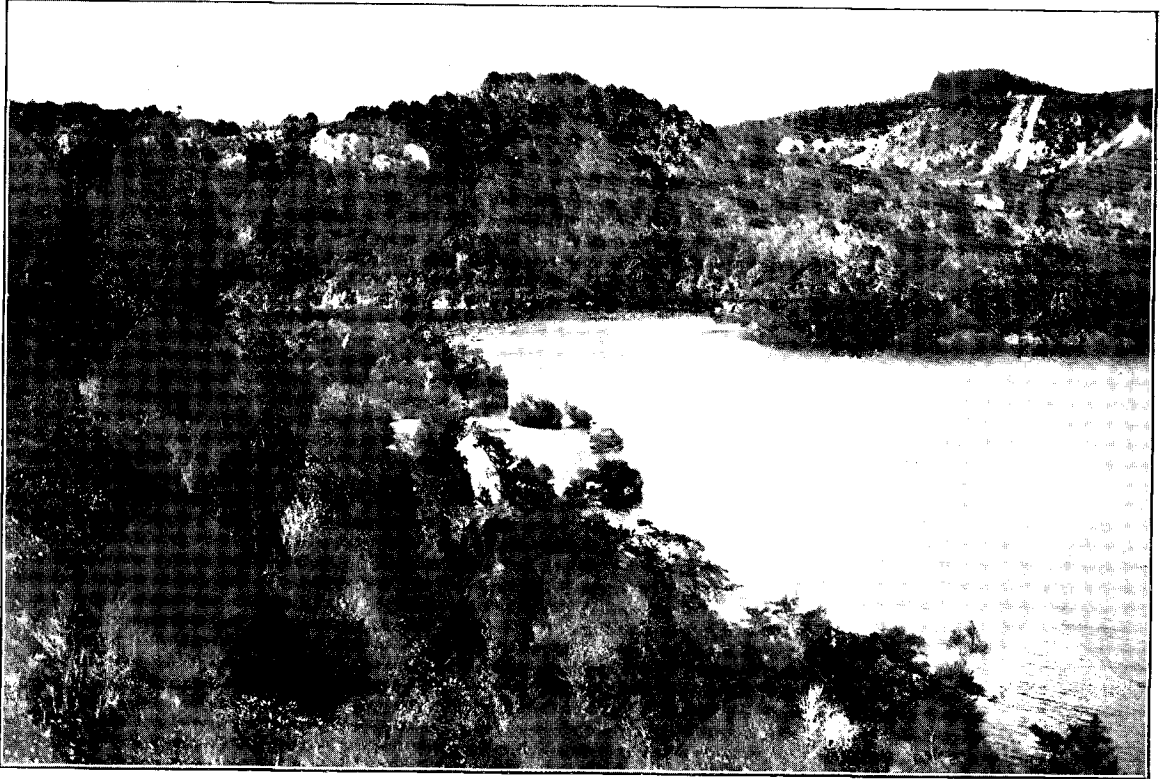


FIG. 3.—Crater lake as seen from right of the track in ascending the mountain. The water is warm, and quite hot near the farther margin.

[Photo W. Boardman.]

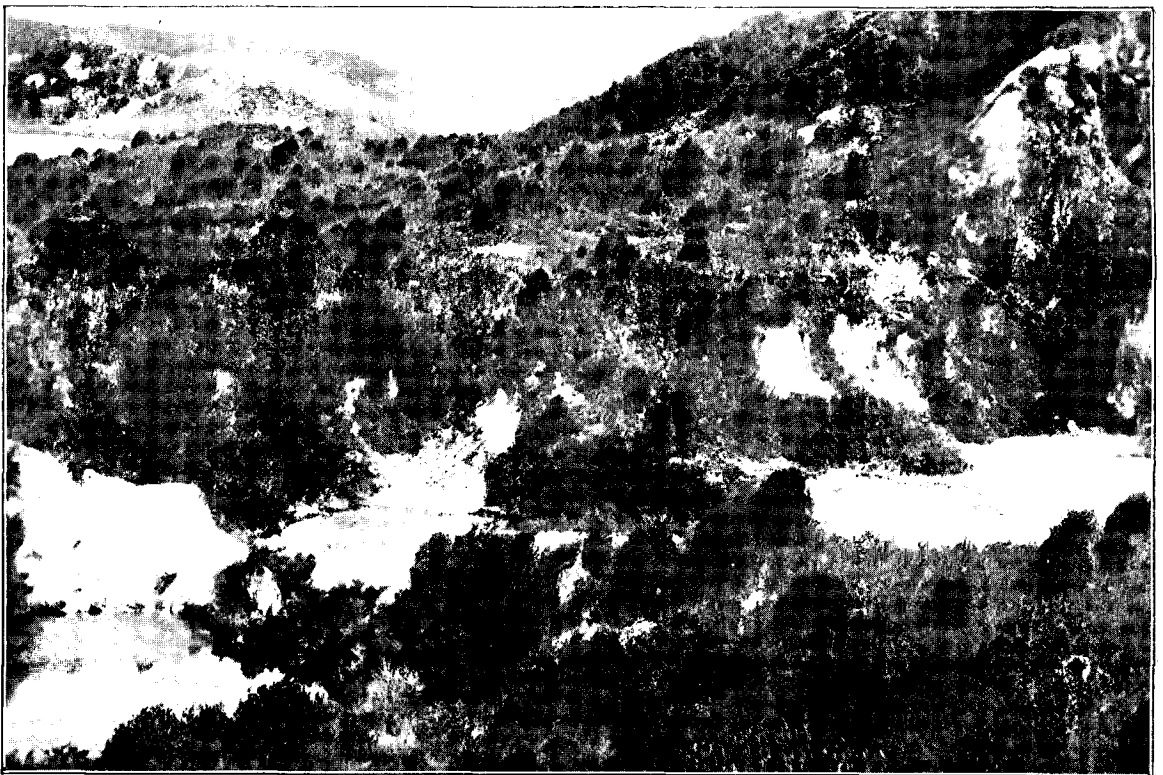


FIG. 4.—View of the three cold crater-lakes seen on left from the track when ascending the mountain. The numerous dark heads of trees are those of the toru (*Persoonia toru*), a species gaining ground in most parts of the mountain examined.

[Photo W. Boardman.]



FIG. 5.—The roof of the rain-forest in the crater, as seen from above.

[Photo W. Boardman.]



FIG. 6.—A young stand of pure manuka (*Leptospermum scoparium*) in process of occupying for a time the open, cool ground, but in background much older trees of toru (*Persoonia toru*) showing their characteristic life-form. Mr. J. Hunter as scale in front of a toru, and the author as scale amongst the manuka.

[Photo W. Boardman.]



FIG. 7.—Prostrate white tea-tree (*Leptospermum ericoides*) growing on warm ground. Mr. J. Hunter as scale.

[Photo W. Boardman.]

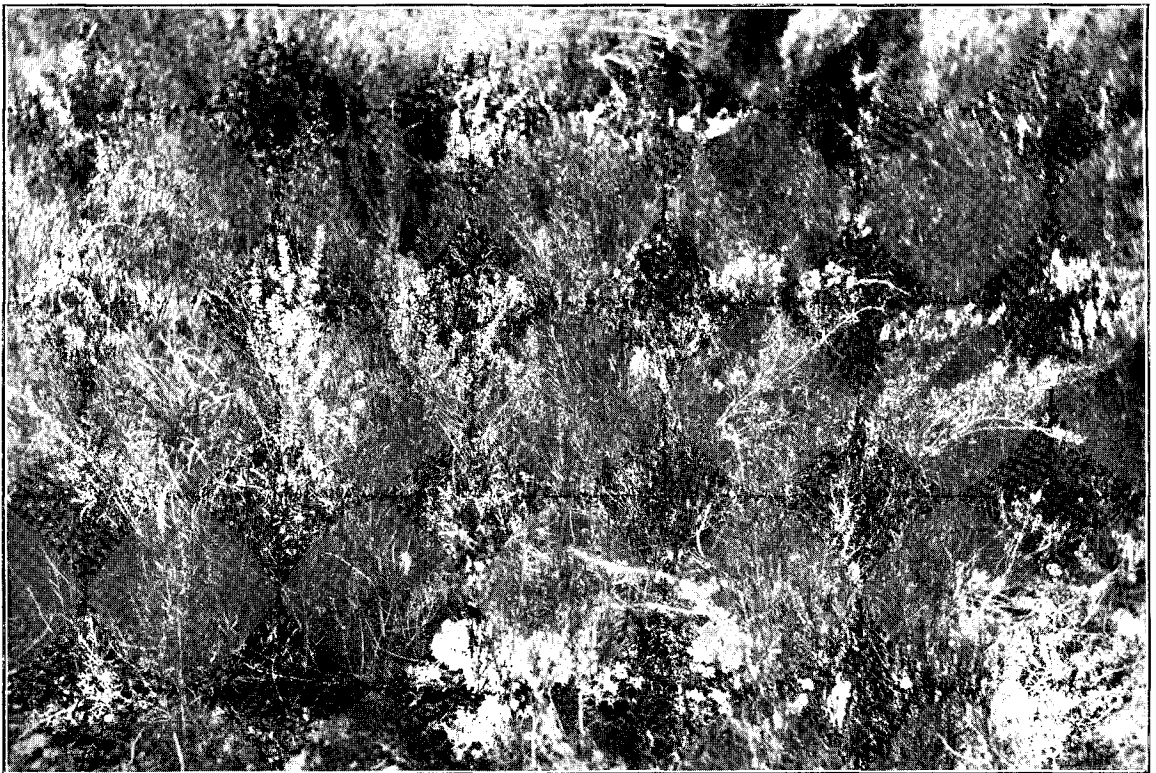


FIG. 8.—A second succession on ground not long cool. The dark twiggy dominant shrub is the monoao (*Dracophyllum subulatum*), and the paler manuka (*Leptospermum scoparium*).

[Photo W. Boardman.]

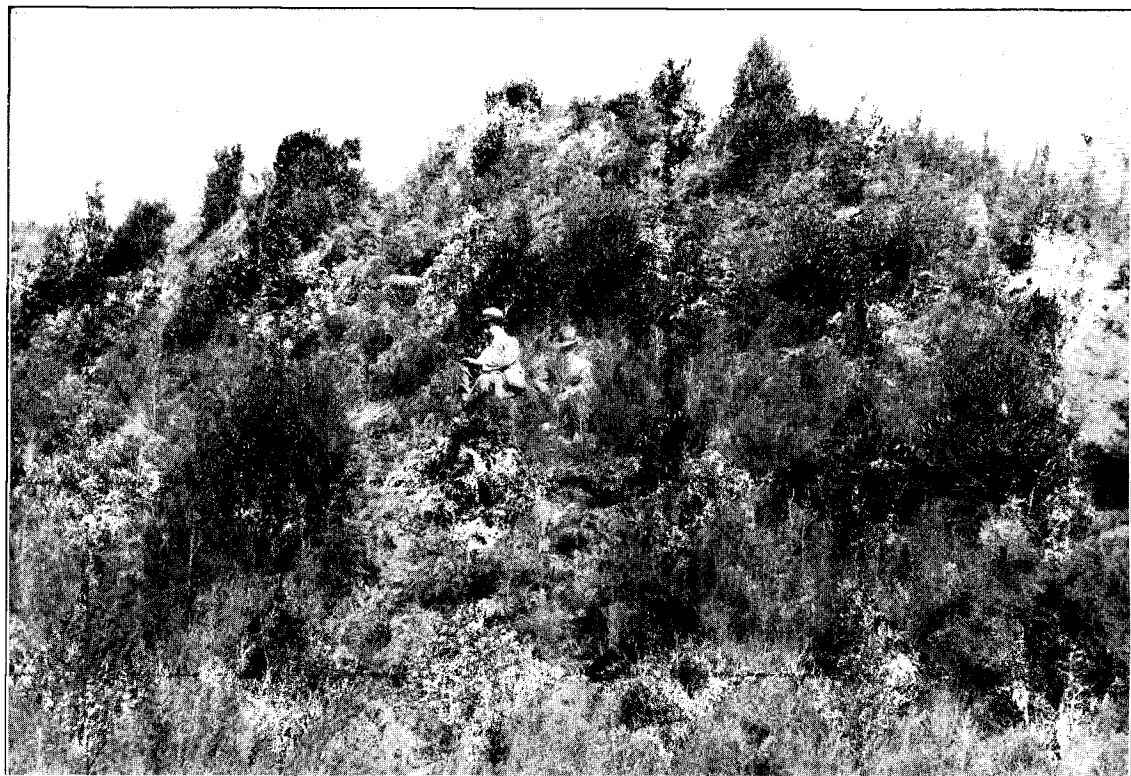


FIG. 9.—An early stage of occupation by plants and later stages intermingled in harmony with irregular cooling of the ground.

[Photo W. Boardman.]

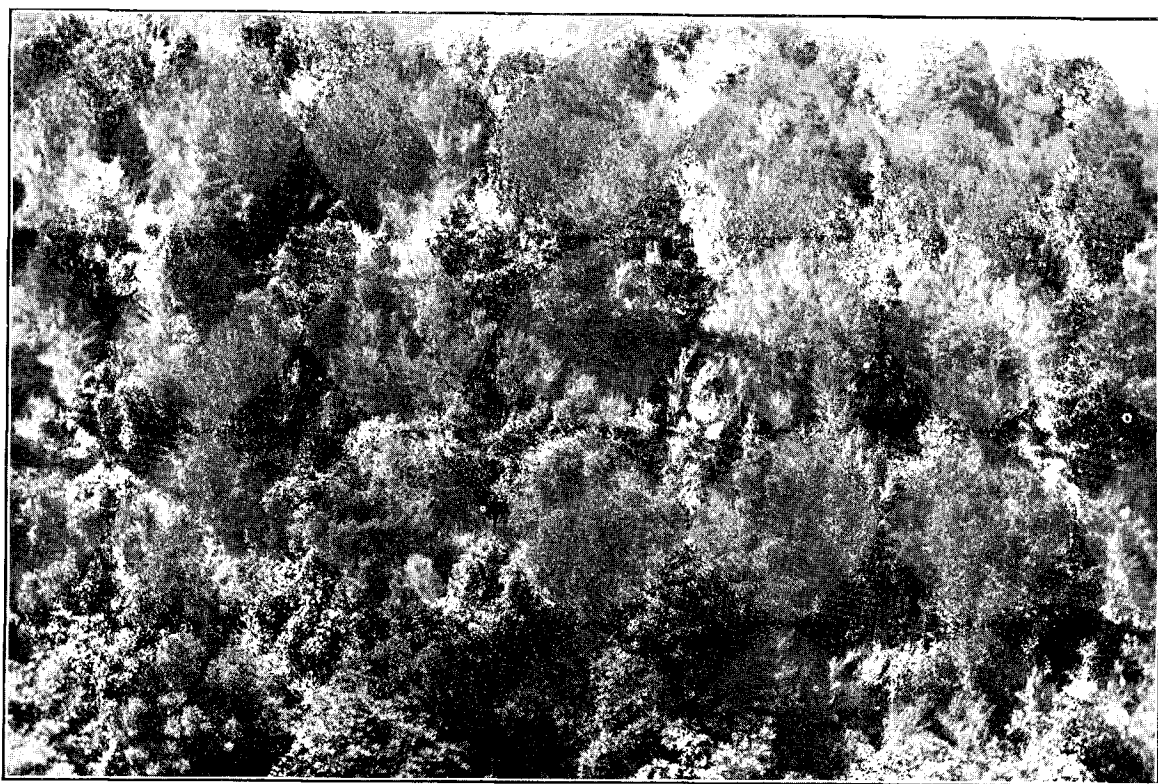


FIG. 10.—The final succession, up to the present, of tall shrubland or shrub-forest.

[Photo W. Boardman.]



FIG. 11.—Juvenile plant of the totorowhiti (*Dracophyllum strictum*).
[Photo W. Boardman.]



FIG. 12.—View of portion of cliffs of main crater, which, in places, still emits steam. Where cold, shrubland is being established. In foreground the path leading to the crater rain-forest.

[Photo W. Boardman.]

THE VEGETATION.

In what follows my remarks are confined to the plant-covering of the south-western slopes of the mountain (Fig. 2), as revealed by observations made during a visit of two days only in the vicinity of the track, from its beginning near the Rotorua-Taupo Road to its ending at the summit, where there is a lookout station of the State Forest Service. Only the vegetation as it is at present and its evolution are considered, notwithstanding there must have been in places an earlier plant-covering, as evidenced by the fact that Mr. Phillips Turner observed "dead totara trunks" in many places, the timber of which "was quite sound." These trunks he considered pointed to the existence of a former forest distinct from the present plant-covering, and his opinion—to my mind reasonable enough—was that "the trees had been killed within the last one hundred years or so, by explosions of boiling water from the craters," or, I might add, detrimental fumes. However that may be, the present vegetation shows many types of succession from that of almost bare ground up to low forest, and it is clear that even the latter can hardly exceed thirty years of age, and is merely transitory. That does not affirm that plant communities similar to those of the present time have not occupied parts of the mountain for far longer than the period mentioned above, for there must have been many changes in regard to the heat, &c., of the ground, and destruction and rejuvenation must have proceeded hand in hand for many years. As for the question of some parts of the vegetation being successions after fire, no evidence is available.

Quite distinct from any other type of the plant-covering is a small piece of true rain-forest, perhaps three hundred years old or older, which is situated in the bottom of a crater several hundred feet below the summit of the mountain (Fig. 5). The presence of this forest is most surprising, but with my limited knowledge of the recent history of the mountain it is idle to speculate as to either its origin or the reason for its stability.

In the year 1908, according to Mr. Phillips Turner, on the southern and south-western slopes of the mountain (Fig. 2) there were a great many fumaroles and solfataras and "comparatively recent extinct craters"; so that, "when seen in the early morning the whole southern side of the mountain seemed to be emitting steam." During my recent visit dry weather with bright sunshine forbade steam being in evidence except for a limited amount issuing from some of the cliffs. According to Mr. L. J. Grange, M.Sc., who has recently examined the mountain from the geological standpoint, and who gave me some interesting information, there are still many fumaroles, and the ground is warm in no few places, but probably thermal activity is less marked than at the time of Mr. Turner's visit twenty-one years ago.

Taking the vegetation as a whole, it comes in large part into that class I have defined in "The Vegetation of New Zealand" (ed. 2, p. 191) as "volcanic plateau (pumice) manuka shrubland"; but in many places the dominant manuka (*Leptospermum scoparium* and *L. ericoides*—one or both) constituent has been greatly reduced in quantity, or even swamped, and the physiognomy of the vegetation changed, by the incoming of certain young trees or shrubs, notably toru (*Persea toru*), kamahi (*Weinmannia racemosa*), whauwhaupaku (*Nothopanax arboreum*) and karamu (*Coprosma lucida*). Above all other species to give a most unusual but specially striking aspect to the vegetation—though far exceeded in number of individuals by many of its associated species—is the toru (*Persea toru*), a low tree, with its ovoid, much-branched, dense heads (Fig. 6) furnished with long, narrow, smooth, polished bright-green leaves; the yellow flowers are deliciously fragrant.

Coming now to the matter of succession, and of the various combinations of species, I can give no direct information as to the incoming of plants on the warm, bare ground in the presence of steam, but it must have been similar to what is happening at Whakarewarewa, Waiotapu, and elsewhere. There the first vascular plants to gain a footing are one of the umbrella-ferns, *Gleichenia microphylla* (*G. circinata* Sw. in "Manual of the New Zealand Flora") and a far-creeping and rooting club-moss, *Lycopodium cernuum*; in fact, both species are still present in the early vegetation of Rainbow Mountain. But of another common denizen of the early succession elsewhere—the water-fern (*Histiopteris incisa*)—I saw no trace.

The mark *par excellence* of warm ground—hot mud may be pretty near the surface—is white tea-tree (*Leptospermum ericoides*), forming a dense rooting mat at times less than 6 in. deep (Fig. 7). Though various other plants gain a footing along with the tea-tree, this—thanks to its far-spreading, light-excluding life-form—easily wipes out its competitors. Apparently the specially characteristic species of the primary succession—using this term in a rather wide sense—are the following: bracken-fern (*Pteridium esculentum*), *Gleichenia microphylla*, *Lycopodium cernuum*, dwarf gahnia (*Gahnia gahniaeformis*), white tea-tree (*Leptospermum ericoides*), mingimingi (a distinct but unnamed variety of *Cyathodes acerosa*), and monoac (*Dracophyllum subulatum*) (Fig. 8); there may also be more or less manuka (*Leptospermum scoparium*), snowberry (*Gaultheria antipoda*), totorowhiti (*Dracophyllum strictum*), and a few lichens and mosses.

Following on after the primary succession are various shrub associations made up of the shrubs of that community together with a few other shrubs and juvenile trees, but frequently *Leptospermum scoparium* is almost pure (Fig. 6). These shrub associations as regards height form many transitions (Fig. 9) between the primary succession and well-defined, tall shrubland which, at its fullest development, may be termed low shrub-forest (Fig. 10). Certain shrubs, when they occur in abundance, give a specially distinct character to an association—e.g., the totorowhiti (*Dracophyllum strictum*), particularly in its long-persisting juvenile form (Fig. 11), with long, tapering leaves extending outwards horizontally. Then in places there is abundance of the niniwa (*Gaultheria oppositifolia*), most striking with its large panicles of white flowers after the manner of the lily of the valley, and biologically of first-class interest on account of its hybrids with *G. antipoda*, which include hundreds of forms making every combination imaginable between the diverse characters of the two species. Were it only on

account of this wealth of hybrids the vegetation of Rainbow Mountain should be rigidly protected. Dr. A. W. Hill, C.M.G., F.R.S., Director of the Royal Botanic Garden, Kew, collected many of these hybrids, and is now studying intensively the New Zealand species and hybrids of *Gaultheria*—a difficult but much-needed piece of research.

Tall shrubland and low shrub-forest can be dealt with together, the species which compose them being identical, and the latter only a step further on towards forest proper, into which, in course of time, it must develop. It is also to be expected that, as humus accumulates, species absent at present will gain a footing, including various ferns. Certain important members of these communities have already been cited; the following must be added to the list but they are in far less numbers, some local, and others rare: ti-ngahere (*Cordyline Banksii*), turutu (*Dianella intermedia*), rewarewa (*Knightia excelsa*), tawheowheo (*Quintinia serrata*) (upper part of mountain), tree-tutu (*Coriaria arborea*), lancewood (*Pseudopanax crassifolium* var. *unifoliolatum*), korokio (*Corokia buddleoides* var. *linearis*) broadleaf (*Griselinia littoralis*), tall mingimingi (*Leucopogon fasciculatus*), monoao (*Dracophyllum subulatum*), and akepiro (*Olearia furfuracea*).

There now remains to be described only the rain-forest of the crater—one of the most important features of the reserve. It can be viewed from above (Fig. 5) or reached by an excellent track (Fig. 12). According to Mr. Phillips Turner, steam issued from a few places in the forest-floor at the time of his visit, but now this has probably ceased. The area occupied is about an acre. Most of the species are absent elsewhere on the mountain.

The tallest trees are miro (*Podocarpus ferrugineus*), rimu (*Dacrydium cupressinum*), toatoa (*Phyllocladus glaucus*), rewarewa (*Knightia excelsa*), kamahi (*Weinmannia racemosa*), northern rata (*Metrosideros robusta*). There is a dense undergrowth of shrubs and small trees, including silver tree-fern (*Cyathea dealbata*), green tree-fern (*Hemitelia Smithii*), wineberry (*Austotelia serrata*), tree-fuchsia (*Fuchsia ercorticata*), whauwhaupaku (*Nothopanax arboreum*), hangehange (*Geniostoma ligustrifolium*), kanono (*Coprosma grandifolia*), karamu (*C. lucida*), and rangiora (*Brachyglottis repanda*). On the floor there is a close growth of kiokio fern (*Blechnum procerum*) (6 ft. deep or more), some climbing polypody (*Polypodium diversifolium*), some shining spleenwort (*Asplenium lucidum*), and huge tussocks of a species of *Gahnia*, perhaps *G. setifolia*. Where the kiokio fern was thickest water lay on the ground. According to Mr. Phillips Turner there are the lianes supplejack (*Rhipogonum scandens*) and bush-lawyer (*Rubus australis*). The ferns *Polypodium diversifolium* and perching spleenwort (*Asplenium adiantoides*) and thick-leaved polypody (*Cyclophorus serpens*) are apparently the only perching plants, but the former is better classed as a climber.

There yet remains for some one to investigate the other parts of the mountain, especially the portions facing north and east, when possibly a good many species would be added to the list, and the associations be better defined. But, incomplete as is my account, it should show how interesting is the ancient volcano from both the scenic and scientific points of view, and how it should be guarded with scrupulous care. Above all, the vegetation should never be interfered with, nor on any account should any plants either indigenous or exotic be planted in its precincts. The object of scenic reserves is to preserve them intact, but not to “improve” them into something different.

LIST OF THE INDIGENOUS VASCULAR PLANTS.

Species, &c.	Popular Name.	Life-form.	Remarks.
FILICES (FERN FAMILY).			
<i>Cyathea dealbata</i> (Forst. f.) Sw. ..	Silver tree-fern ..	Medium-sized tree-fern ..	Only in rain-forest of crater.
<i>Hemitelia Smithii</i> (Hook. f.) Hook	Green tree-fern ..	Medium-sized tree-fern ..	Only in rain-forest of crater.
<i>Asplenium adiantoides</i> (Linn. f.) C. Chr.	Perching spleenwort ..	Large fern with leaves in tufts	Only in rain-forest of crater.
— <i>lucidum</i> Forst. f. ..	Shining spleenwort ..	Large fern with leaves in tufts	Only in rain-forest of crater.
<i>Blechnum procerum</i> (Forst.f.) C. Chr.	Kiokio fern ..	Fern with enormous spreading leaves	Only in rain-forest of crater.
<i>Pteridium esculentum</i> (Forst. f.) Ckn.	Bracken-fern ..	Large fern, far-creeping and rooting	Only where light is abundant.
<i>Paesia scaberula</i> (Presl.) Kuhn...	Hard-fern ..	Medium-sized fern, far-creeping and rooting	Only where light is abundant; not common.
<i>Polypodium diversifolium</i> Willd. ..	Climbing polypody ..	Medium-sized climbing fern	Only in rain-forest of crater.
<i>Cyclophorus serpens</i> (Forst. f.) C. Chr.	Thick-leaved polypody..	Small creeping, perching fern with thick leaves	Only in rain-forest of crater.
<i>Gleichenia microphylla</i> R. Br.	Scrambling umbrella-fern	Large far-creeping scrambling fern	On warm ground.
<i>Leptopteris hymenophylloides</i> (A. Rich.) Presl.	Single crape-fern ..	Large fern with thin leaves in tufts	Only in rain-forest of crater.
LYCOPODIACEAE (CLUB-MOSS FAMILY).			
<i>Lycopodium cernuum</i> L... ..	Creeping club-moss ..	Semi-woody creeping plant	On warm ground.
— <i>fastigiatum</i> R.Br. ..	Alpine club-moss ..	Semi-woody, erect, far-creeping plant	Very rare.
— <i>volubile</i> Forst. f. ..	Climbing club-moss ..	Slender woody climbing plant	Rare.

LIST OF THE INDIGENOUS VASCULAR PLANTS—continued.

Species, &c.	Popular Name.	Life-form.	Remarks.
PODOCARPACEAE (PODOCARP FAMILY).			
<i>Podocarpus ferrugineus</i> Don. ..	Miro	Tall tree	Only in rain-forest of crater.
<i>Dacrydium cupressinum</i> Sol. ..	Rimu	Tall tree	Only in rain-forest of crater.
<i>Phyllocladus glaucus</i> Carr ..	Toatoa	Small tree	Rain-forest of crater, and one specimen seen in the shrubland.
GRAMINEAE (GRASS FAMILY).			
<i>Arundo conspicua</i>	Toetoe	Very large tussock-grass ..	Not seen by me: most likely at junction of mountain and shrubland of plateau.
CYPERACEAE (SEDGE FAMILY).			
<i>Schoenus brevifolius</i> R. Br. ..	Common beaked rush ..	Medium-sized rush-like tussock	Only one specimen seen; may be <i>S. Tendo</i> .
<i>Gahnia gahniaeformis</i> (Gaud.) Heller	Dwarf gahnia ..	Small tufted grass-like plant	Fairly common, but only in good light.
— <i>setifolia</i> (A. Rich.) Hook. f.	Common gahnia ..	Large grass-like tussock ..	Only in rain-forest of crater; identification not certain.
LILIACEAE (LILY FAMILY).			
<i>Rhipogonum scandens</i> J.R. et G. Forst.	Supplejack	High-climbing, winding, woody climber	Only in rain-forest of crater; not seen by me.
<i>Cordyline Banksii</i> Hook. f. ..	Ti-ngahere	Tuft-shrub up to medium-sized tree	Here and there.
<i>Dianella intermedia</i> Endl. ..	Turutu	Medium-sized creeping grass-like plant	Not common.
<i>Astelia Cunninghamii</i> Hook. f. ..	Kowharawhara ..	Massive tussock-like perching plant	Rare.
<i>Phormium tenax</i> J.R. et G. Forst.	New Zealand flax ..	Massive very tall Iris-like tussock plant	Common in places.
ORCHIDACEAE (ORCHID FAMILY).			
<i>Orthoceras structum</i> R.Br. ..	Mamaika	Medium-sized tuberous orchid	Rare.
<i>Thelymitra longifolia</i> J.R. et G. Forst.	Maikuku	Medium-sized tuberous orchid	Rare; identification not certain.
PROTEACEAE (PROTEA FAMILY).			
<i>Persoonia toru</i> A. Cunn. ..	Toru	Small ovoid-headed tree ..	Common and rapidly increasing.
<i>Knightia excelsa</i> R.Br.	Rewarewa	Tall fastigate tree, but the slender, long, narrow-leaved juvenile is the Rainbow Mountain form	Here and there.
LORANTHACEAE (MISTLETOE FAMILY).			
<i>Loranthus micranthus</i> Hook. f. ..	Common mistletoe ..	Woody parasite ..	Only one specimen seen; identification uncertain.
SAXIFRAGACEAE (SAXIFRAGE FAMILY).			
<i>Quinteria serrata</i> A. Cunn. ..	Tawhewheo	Small tree, but only the dense shrub-form as yet on Rainbow Mountain	Fairly common on upper part of mountain.
CUNONIACEAE (CUNONIA FAMILY).			
<i>Weinmannia racemosa</i>	Kamahi	Tall tree, but as yet only a dense shrub on Rainbow Mountain, except in rain-forest of crater	Common throughout.
ROSACEAE (ROSE FAMILY).			
<i>Rubus australis</i> Forst. f. ..	Bush-lawyer	Woody scrambling climber	Not seen by me.
<i>Acaena Sanguisorbæ</i> Vahl var. <i>pusilla</i> Bitter	Piripiri	Far-spreading semi-woody mat plant	Only on side of track; nothing to do with the true vegetation.
CORIARIACEAE (TUTU FAMILY).			
<i>Coriaria arborea</i> Lindsay ..	Tree-tutu	Small tree or tall shrub ..	Here and there.
THYMELAEACEAE (PIMELEA FAMILY).			
<i>Pimelea prostrata</i> (Forst. f.) Willd.	Common pimelea ..	Small mat-like shrub ..	Not common.

LIST OF THE INDIGENOUS VASCULAR PLANTS—*continued*.

Species, &c.	Popular Name.	Life-form.	Remarks.
MYRTACEAE (MYRTLE FAMILY).			
<i>Leptospermum scoparium</i> J. R. et G. Forst.	Manuka, red tea-tree ("ti-tree" incorrect)	Erect twiggy shrub ..	The dominant plant of the mountain.
— <i>ericoides</i> A. Rich. ..	White tea-tree ..	Mat-forming or erect shrub	Common.
<i>Metrosideros robusta</i> A. Cunn. ..	Northern rata ..	Tall tree, but medium-sized on the mountain	Rain-forest in crater only. Its early epiphytic habit should have made it an early settler on the open ground.
ONAGRACEAE (WILLOWHERB FAMILY).			
<i>Fuchsia excorticata</i> (J. R. et G. Forst.) Linn. f.	Tree-fuchsia	Small deciduous tree ..	Only in rain-forest of crater; not seen by me.
ARALIACEAE (ARALIAD FAMILY).			
<i>Nothopanax arboreum</i> (Forst. f.) Seem.	Whauwhaupaku ..	Small tree, but as yet only dense shrub on the mountain	Common.
<i>Pseudopanax crassifolium</i> (Sol. ex A. Cunn) C. Koch var. <i>unifoliolatum</i> T. Kirk	Lancewood	Small tree, but the slender juvenile with long, deflexed leaves is the form on the mountain	Here and there.
CORNACEAE (DOGWOOD FAMILY).			
<i>Corokia buddleoides</i> A. Cunn. var. <i>linearis</i> Cheesem.	Korokio	Medium-sized shrub ..	Occasional on upper part of mountain.
ERICACEAE (HEATH FAMILY).			
<i>Gaultheria antipoda</i> Forst. f. ..	Snowberry	Small shrub, 2-4 ft. high or more	This is the erect form apparently common throughout New Zealand, with varieties with white and dark red—almost black—swollen calyces when in fruit.
— — × <i>oppositifolia</i> ..	.. ..	Small or tall shrubs ..	Rainbow Mountain is destined to become botanically famous on account of this wonderful series of hybrids, specially abundant where ground has been cleared at beginning of track.
— <i>oppositifolia</i> Hook. f. ..	Niniwa	Medium-sized shrub to almost a low tree	Common.
EPACRIDACEAE (AUSTRALIAN HEATH FAMILY).			
<i>Cyathodes acerosa</i> R. Br. ..	Mingimingi (a name used, unfortunately, for other plants)	Small shrub with short, sharp leaves	Common. The species is made up of many varieties, and is badly understood.
— <i>empetrifolia</i> Hook. f. ..	Prostrate mingimingi ..	Small prostrate shrub ..	Only observed on wetish ground near beginning of track. Leaves seem shorter and more hairy than usual.
<i>Leucopogon fasciculatus</i> (Forst. f.) A. Rich.	Tall mingimingi ..	Tall erect shrub ..	..
<i>Dracophyllum strictum</i> Hook. f. ..	Totorowhiti	Tall shrub with rather long, narrow, tapering, sharply pointed leaves	Common. The juvenile, with broader leaves than the adult and long persisting, is the more abundant.
— <i>subulatum</i> Hook. f. ..	Monoao	Medium-sized shrub with brownish grassy leaves	Grows gregariously on specially barren ground.
LOGANIACEAE (LOGANIA FAMILY).			
<i>Geniostoma ligustrifolium</i> A. Cunn.	Hangehange	Tall much-branched shrub	Only in the rain-forests of the crater.
SCROPHULARIACEAE (KOROMIKO FAMILY).			
<i>Hebe salicifolia</i> (Forst. f.) Pennell	Common koromiko ..	Tall much-branched shrub	Rare; one of the many varieties of this compound species.

LIST OF THE INDIGENOUS VASCULAR PLANTS—*continued*.

Species, &c.	Popular Name.	Life-form.	Remarks.
RUBIACEAE (COPROSMA FAMILY).			
<i>Coprosma grandifolia</i> (Hook. f. ..	Kanono	Tall much-branched shrub with large leaves	Only in rain-forest of crater.
— <i>lucida</i> Forst. f.	Karamu	Tall much-branched shrub	Common; leaves thicker than usual.
COMPOSITAE (DAISY FAMILY).			
<i>Olearia furfuracea</i> (A. Rich.) Hook. f.	Akepiro	Tall much-branched shrub with thick leaves	Fairly common on upper part of the mountain; there are many distinct forms.
<i>Celmisia longifolia</i> Cass. ..	Common celmisia ..	Small tufted evergreen herb	Apparently confined to side of track; very rare.
<i>Brachyglottis repanda</i> J. R. et G. Forst.	Rangiora	Tall much-branched shrubs with large leaves tomentose beneath	Only in rain-forest of crater.

APPENDIX D.

KAPITI ISLAND.

REPORT OF CARETAKER (MR. A. S. WILKINSON) FOR THE YEAR ENDED 31ST MARCH, 1929.

IDEAL weather conditions prevailed almost throughout the past year, consequently the plant-life of the island shows good progress. This progress is particularly noticeable on the dry manuka ridges. All over the island, but particularly in that portion north of the waterfall ridge, the regeneration of the forest has been wonderful, and proves conclusively that when herbivorous animals are removed from native bush the plant-life soon reverts to its natural condition. South of the waterfall ridge, where sheep roamed until twelve months ago, the young growth has already made a good start. In the open places many valuable species are showing up. In the kohekohe bush at the south end the undergrowth is not so prominent, owing to the thick roof of the forest keeping out the light. On the western side of the island many plants of kowhai, ngaio, akeake, taupata, koromiko, and tauhinu are noticeable on the cliffs. These are best seen from a boat. Manuka is also creeping down the cliffs in many places, and will provide cover for other useful trees. Erosion has been responsible during the year for several large slips on the western side. The area of ground between Kahuoterangi and the boundary-fence, which a few years ago was nearly all grass, is now almost completely covered with manuka, among which growth is now making great headway. Plants of all the most useful species, such as houhou, horoeka, karamu, matipo, mahoe, and others are making splendid progress.

On the Taepiro ridge, north of the valley of that name, which four years ago was absolutely bare, the undergrowth is now grown so much that it is almost impossible to traverse the ridge. Along this ridge is growing the beautiful *Senecio Kirkii*, covered with flowers, and presenting a most beautiful sight to the nature-lover. In the Taepiro Valley itself kotukutuku is growing all along the stream, and many other plants are helping to cover the grass, the most prominent being the whauwhaupaku (*Nothopanax anomalum*), manuka, mahoe, makomako, houhou, and horoeka. In the Kaiwharawhara, numerous young cabbage-trees are coming up.

Along the shore on the eastern side of the island the taupata, one of our most useful trees, is rapidly re-establishing itself. So much are the berries of this plant sought after by the birds that it is impossible to collect any, because they are eaten as soon as they show colour.

As the past season has been such a good one for the growth of plants it naturally follows that it has also been favourable for the birds, for the one depends upon the other. Bird-food was everywhere abundant. Karaka-berries made the trees look yellow with the load of fruit carried. The kohekohe, one of our best trees, as it flowers in winter when food is somewhat scarce, can now be seen with great bunches of grape-like berries hanging from the bare branches. This tree flowers in May and June, and during this time the tuis and the bell-birds, which come to our cottage for syrup, practically desert us for the nectar obtained from the flowers of this tree. When bell-birds are feeding on the flowers of the kohekohe they present a most beautiful and interesting sight. Dozens of them may be seen hanging upside down, sipping the nectar, while the bush resounds with the glorious notes of this famous songster. When the ngaio-berries were ripe, dozens of tuis frequented a patch of these trees just behind our cottage. A flock of starlings invaded their domain, but were soon chased out by the tuis. Starlings are becoming a pest on the island, both during the nesting season, when they make use of hollow trees for nesting-sites, and later when the berries are ripe. Most of the birds show a decided increase in numbers, the most noticeable being the North Island robin. It is not unusual to count a dozen of these birds during a walk to the summit of the island. The tieke, the birds that were transferred to Kapiti some years ago from one of the northern sanctuaries, seem to be doing all right. They were several times seen during the year. They are usually silent, or at least call very seldom, for a great part of the year, so could be passed without being noticed.

An important event which happened during the year was the identification of the kiwi on the island. These birds have increased considerably during the last few years. As many as six different birds have been heard calling at the same time. As there was no record on the file here as to which species had been liberated on the sanctuary, I was naturally anxious to see the birds. I had thought some of the birds I heard calling were the little grey kiwi, but I understood from Mr. E. Phillips Turner that the birds liberated by him were obtained in the Upper Whanganui, so those would be the brown kiwi. However, the mystery has been solved so far as two species at least are concerned. I asked Mr. Fletcher, the opossum-trapper, to keep a good lookout for kiwi, so on the 10th March he brought me an adult bird that he had caught close to his hut at the waterfall. The bird proved to be the little grey kiwi (*Apteryx oweni*) from the South Island. The bird was in good condition, and after being examined was returned to the place where it had been caught. On the 22nd March the trapper brought me another kiwi, which proved to be the North Island brown kiwi (*Apteryx mantelli*), so that we have two species of kiwi on the island. This bird was returned to the Kaiwharawhara Valley, where it was caught. It was in a good healthy condition but infested with lice.

The kakapo was seen several times during the year. Sea-birds also have had a good season, especially the big handsome gulls (*Larus dominicanus*). One pair nested on the beach at Rangatira and reared three young ones. Gulls have not nested there since the summer of 1923, when a pair reared a family of three.

During the year I received many rare plants from different people who are interested in the preservation of our native flora, and I take this opportunity of placing on record my thanks and appreciation for the trouble and expense incurred by the donors, whose names are here mentioned: Mr. H. Fitton, Paraparaumu Beach—plants of *Hoheria populnea*; Miss Phyllis Arden, New Plymouth—three dozen plants of *Marattia fraxinea*; Mr. O'Connor, Wadestown—plants of *Elatostema rugosum* and *Dracophyllum latifolium*; Mr. K. W. Dalrymple, Bulls—plants of *Podocarpus dactyloides*, *Myoporum laetum*, *Aristolelia racemosa*, *Solanum aviculare*, *Bulbophyllum tuberculatum*, *Sicyos angulata*, *Veronica cataractae*, *V. Lyallii*, *Rubus parvus*, *Pittosporum crassifolium*, *Coprosma repens*, *C. Petrei*, and *Pratia angulata*; Mr. A. Morris Jones, Karori—plants of *Dacrydium cupressinum*, *Podocarpus dactyloides*, *Nothofagus truncata*, *Cyathodes acerosa*, *Blechnum patersoni*, and seeds of *Notospartium carmichaeliae*; Mrs. T. Smith, Brooklyn—plants of *Pomaderris elliptica* and *Dracophyllum longifolium*; Mr. A. Ainsworth, Kilbirnie—plants of *Veronica Hulkeana*; Mr. W. Hurrow, Paraparaumu—200 plants of *Coprosma retusa*. The *Myoporum*, *Aristolelia*, and *Solanum* presented by Mr. Dalrymple were the large-leaved form, and were collected on Mercury Island, Bay of Plenty. All the plants were put out in suitable places on different parts of the sanctuary after the names were entered in my plant-ledger. Besides these plants, many others common to the island were planted out in the open places and along the shore from Webber's to the south end. Seeds of taupata, manuka, ngaio, pohutukawa, kohepiro, and karaka were planted about, mostly on the western side.

During the year two plants that have not previously been recorded as growing on Kapiti were found. One is *Melicope simplex*, growing in Taepiro, and the other a rare fern growing on a dry manuka spur close to the Te Rere Stream. I sent some of the fern to Doctor H. H. Allan, the noted botanist, who forwarded them to the authorities at Kew Gardens. It was pronounced to be *Polystichum mohrioides*, a fern which I believe has only been reported as growing in the New Zealand area in the Auckland Islands. It is evidently very rare, as Cheeseman does not include it in the second edition of his Manual, but adds a note, "I have omitted from the enumeration *P. mohrioides* (Prest), the existence of which in the New Zealand area depends entirely on Mr. Kirk's record in Trans. N.Z. xiv, 386. There are no specimens in his herbarium, and I fear that some mistake was made in the identification." The finding of this fern on Kapiti proves that Mr. Kirk was right in his identification, and it must be added to the New Zealand list of polystichums.

The most important work remaining to be done on the island is the extermination of the opossum and rats. Both these animals are enemies of our native birds, and must be exterminated before the island can be called a sanctuary. The eradication of these animals, the rat especially, will prove to be a very difficult proposition. Mr. Fletcher has done good work in getting the opossums so low in numbers—so low, indeed, that he finds it difficult to make a living-wage by trapping alone. Were it not that he has an excellent dog to hunt out these animals he would hardly catch any. Many of those caught by the dog were maimed, showing that they had been caught in the traps and escaped.

The extermination of the rats will be more difficult to accomplish than were the goats, and they were hard enough. The trapper occasionally catches a few in his opossum-traps, but the traps have to be baited to take rats, and the bait is also an attraction for several of our native birds, so the greatest of care must be exercised. Poisoning is likewise very risky.

Trapping and poisoning in a very restricted area has been carried out during the year, but these pests are still too numerous. While it is impossible to estimate the number poisoned, it is easy to get at the number trapped, as a strict record is kept both by the trapper and myself. The total for the year reached 419.



Kauris, Trounson Kauri Park.



“The Four Sisters”—Enormous kauri tree, all one root: Trounson Kauri Park.

[Face page 15.]



APPENDIX E.

SOME NOTES ON TROUNSON KAURI PARK.

In the year 1900 the Government, recognizing that the kauri forests in the Northern Wairoa district were rapidly diminishing as a result of timber-milling operations, decided to conserve as a scenic reserve an area of about 8 acres of Crown land situated at the head of the Kaihu Valley. This area contained some very fine specimens of kauri-trees, one giant tree having a circumference of 78 ft. with a diameter of 26 ft. at the base, the height to the first branch being 75 ft. Unfortunately, this tree was destroyed owing to a fire which entered the forest, and it soon became apparent that in order to conserve the forest for the benefit of future generations a larger area would have to be set aside as a scenic reserve.

Adjoining the reserve was a considerable area of very fine kauri forest which had been acquired by Mr. James Trounson for milling purposes, and he, being in full sympathy with the project of conserving the forest, generously transferred to the Government an area of about 41 acres, receiving in exchange its equivalent in timber in another part of the district.

Later Mr. Trounson made a direct gift to the Government of a further 12 acres of forest land, containing many magnificent specimens of giant kauris, and this was added to the park.

By this time, with the exception of about 900 acres of forest land adjoining the park and owned by Mr. Trounson, the timber resources of the Northern Wairoa were almost exhausted, and active measures were taken by the Scenic Preservation Club, which had been formed in the district, in conjunction with the local bodies, to secure this great national asset to the general public. Mr. James Trounson came forward with a further generous offer to dispose of this area to the Government at half the assessed marketable value of the timber, and making a gift of the land, which offer was readily availed of by the Government.

On the 29th November, 1921, His Excellency the Governor-General, Viscount Jellicoe, accompanied by Lady Jellicoe, visited the park, and, in the presence of a large assemblage, accepted from Mr. Trounson, on behalf of the people of New Zealand, the title-deeds, and named the forest "Trounson Kauri Park," thereby perpetuating the memory of one of New Zealand's public benefactors.

It has been necessary to take all possible steps to safeguard the forest from destruction by fire, and consequently further areas, mostly open land, have been added to the park, until the total area now under reservation for scenic purposes is 1,080 acres 2 roods, 16 perches.

A large amount has been expended in constructing access roads and providing tracks through the forest, and with these facilities the park is becoming increasingly popular with tourists and others, and the number of visitors increases yearly. Fire-breaks have been provided by ploughing a belt of land around the park and sowing same in suitable grasses, which has been the means of greatly minimizing the risk of fires entering the forest. Up to the 31st March last the expenditure on the park had reached the sum of £46,398, of which amount £40,000 represents the compensation paid to Mr. Trounson on account of the value of the timber.

The park lies five or six miles north of Kaihu, with Mangonui Bluff away to the left. The rail to Donnelly's Crossing, or Aranga, brings visitors within easy distance of the park, access tracks to the heart of the forest having been provided.

Visitors to Trounson Kauri Park who have had the opportunity of visiting most of the principal kauri forests describe this park as containing the finest specimens of kauri in New Zealand. Whether in size, height, or environment, there is nothing to equal it anywhere. Viewed from a neighbouring hill overlooking the park the forest appears to be all kauri, as there is nothing to be seen over practically the whole expanse but the tops of kauri-trees. Upon entering the forest, however, many varieties of smaller trees are to be found in profusion, thereby adding to the charm of the forest. Above all, the kauri lifts its massive branches, forming an almost continuous canopy.

The park is under the able supervision of Mr. R. M. Donaldson as caretaker, who spares no pains in protecting the forest from destruction by fire or otherwise, and in affording every assistance to visitors desirous of seeing the scenic beauties of the park.

Recently has come the news of the lamented death of Mr. James Trounson, the benefactor whose name is so closely associated with this park. He was endowed with a gentle and kindly disposition combined with an unassuming manner, which commanded the respect of all with whom he came in contact. The remark made by him at the ceremony in connection with the naming of the park is typical of his whole life. "I am not young in years, and if I am going to give any one pleasure I had better start," he said. "This bush has been one of the greatest pleasures of my life, and I would like to pass on that pleasure to the generations to come. If my gift will give pleasure to the people, and if it inspires gratitude to the Giver of all good, I shall be well repaid."

APPENDIX F.

CAPE KIDNAPPER BIRD SANCTUARY BOARD.

(J. D. THOMSON, Chairman.)

AN official visit of inspection was made by the Board on the 1st March, 1929. It was computed by one of the members that the number of gannets now on the cape is at least five thousand. The veteran naturalist, Mr. Henry Hill, who is also a member of the Board, states that he first visited the cape fifty years ago and at that time the number of gannets did not exceed fifty. It is quite evident that it will always be a gannet resort. The sanctuary is a unique spot, and is probably the only place in the world where these interesting birds nest on the mainland. The sight of them in their habitat is never to be forgotten. Birds on all sides, sitting or flying round—the scene is one of perpetual motion, as the birds seem never at rest.

The nesting season was over, and the young birds, unable to fly, were there in great numbers, flapping their immature wings up and down and occasionally dragging their bodies over a few feet of ground. At the top end of the hill were gathered the more advanced youngsters who would shortly practise flying down the hill. The old birds were flying round in circles, or off on fishing-trips, or squabbling with their neighbours, while over all was one ceaseless, reverberating, squawking clamour.

APPENDIX G.

NEW PLYMOUTH SCENIC RESERVES BOARD.

(W. D. ARMIT, Chairman.)

Two meetings of the Board were held during the year, and a number of inspections of the various reserves were made by myself and members. In addition frequent reports have been obtained from the Field Inspectors on the various reserves under the Board's control.

The following is a short summary of the operations of the Board during the year :—

Pukerangiora Pa.—The trees on this reserve have made good growth with the exception of the area which was replanted in 1927. On a recent inspection it was found that the fern had made strong growth on this area, and it is intended to clear and maintain this area again. The gorse on the road boundary also requires to be cleared, and some of this is now fairly heavy. These matters are receiving early attention. The Legion of Frontiersmen have taken an active interest in this reserve during the past twelve months. Two field-days were arranged by them and tracks cleared from the access gate towards the cliff and also to the old sap, thus enabling visitors to move freely within the planted areas and view historic points. The action of the Legion in this respect is much appreciated by the Reserves Board. A complaint was made by some Maoris in the locality that the ancient burial-places on this reserve had been disturbed, but on investigation it was found that this statement was entirely without foundation.

Meeting of the Waters Reserve.—This reserve is frequented by large numbers of the public and has become a picnic resort for many New Plymouth and surrounding district residents. Repairs to the suspension bridge comprise further replacement of some of the decking, and other replacements are still necessary to maintain the structure in a safe condition. It is regretted that the public, particularly the youth of the community, persist in swinging this structure, causing undue strain and shortening its life of usefulness. The bridge has been stayed as far as practicable, to minimize the actions of irresponsible people in this direction, but the nuisance cannot altogether be prevented. Stock trespass has been prevented by the repair of certain fences, and the flora in this reserve is of particular interest owing to its wide range and accessibility. The acquisition of a small area of 11 perches to give access to the western approach of the bridge has been completed, and the title now vests in the Crown. The thanks of the Board are due to Mr. C. H. Weston in this connection for his honorary services in preparing the transfer from the Mangorei Co-operative Dairy Factory Co., Ltd., to the Crown.

Pukemiro and Onaero Reserves.—The necessary funds have been obtained by way of grant for the work of fencing the boundary of the former reserve, and this will shortly be put in hand. As a deviation of the main North Road is suggested, the work of re-erecting the road boundary is not being proceeded with at present.

Koru Pa.—This reserve continues to attract a large number of visitors. The reserve has been frequently inspected, and some promiscuous lighting of fires is engaging the attention of the Board.

Okoke Pa and Te-Awa-te-Take Pa.—No action has been required concerning these pas for the year just ended.

Ratapihipihi Reserve.—The work of repairing the boundary-fences on this reserve has been carried out during the year, in conjunction with the adjoining owners.

Generally speaking, the reserves under the control of the Board are in good order and condition. The thanks of the Board are due to the honorary inspectors who have been appointed to look after the scenic reserves in their various districts. These are Mr. A. R. Gudopp, who has control of the Ratapihipihi Reserve; Mr. S. Topless, who has control of the Pukemiro and Onaero Reserves; Mr. P. H. E. Surrey, of Pukerangiora Pa; Mr. Henry Cole, of Awa-Te-Take Pa; Mr. Henry King, of the Meeting of the Waters Reserve; and Mr. R. W. J. Davies, of the reserves in the Taranaki District generally.

APPENDIX H.

TARANAKI SCENIC RESERVES.

(W. D. ARMIT, Commissioner of Crown Lands.)

DURING the year inspections have been made of practically every scenic reserve in the land district, particular attention being paid to cases of vandalism, damage by fire, and trespass of stock. While these inspections show that the majority of the reserves are in good condition, several cases of vandalism have been reported by the Field Inspectors, and penalties commensurate with the offences have been collected from the persons concerned. The Tangaraku Gorge Reserves suffered to a small extent by travelling fires during the late summer of 1928, but no further damage has since been reported in this locality.

The Wanganui and Mokau River Reserves have all been inspected during the year, and were found to be in very good condition.

Although a number of the smaller reserves comprise good settlement land, in most cases the farming-value is far outweighed by their scenic attractions. The larger reserves all comprise poor rough country, of scenic value only.

Arrangements have been made to inspect scenic reserves annually, and a ledger record is kept of the condition of each reserve. A number of the most important scenic areas require attention in regard to fencing, and recommendations are being made in this direction from time to time with a view to preventing damage by stock.

APPENDIX I.

MARLBOROUGH SCENIC RESERVES.

(P. R. WILKINSON, Commissioner of Crown Lands.)

I HAVE pleasure in reporting that during the last year steady progress has been made in the reafforestation, by natural means, of a number of scenic reserves recently created which had at some former period been more or less denuded by fires. The past summer season, by reason of the unusual amount of rainfall, has been wetter than preceding seasons for many years, consequently there have not been so many fires reported as in the past. In October, however, owing to the abnormally dry conditions in the Kaikoura district, disastrous bush-fires occurred which—although the forest reserve suffered to a considerable extent—only touched two of our scenic reserves, those at Black Miller Stream and Paparoa Point. The fire came through these reserves in several places, but will not permanently mar their appearance, as owing to the plenteous rainfall the bush quickly re-establishes itself in these localities.

In the Sounds District, however, a more serious state of affairs prevails. Acting under the recommendations of the Scenery Preservation Board, many small islands have lately been reserved for scenic purposes which for years previously had been held under temporary grazing license. Amongst these were Motuanauru (Motnara) Island, famous for its historic interest on account of Captain Cook's visits of discovery. On this island he proclaimed the sovereignty of the British rule, and also established a shore hospital to treat his sick sailors. This island and Long Island (Te Keetu) were quickly reverting to light native bush, but since Christmas some misguided persons have feloniously set fire to them. Not much damage has been done to Long Island, but Motuanauru Island has suffered to the extent of some 50 acres being burnt—about one-third of its area. Such reprehensible conduct is hard to understand, for although there is a lack of sympathy amongst a small section of the Sounds settlers on account of some few small areas being withdrawn from sheep-grazing, yet it must be evident to them that the increased interest from a scenic point of view is proportionately more valuable as a tourist attraction than the grazing of the few hundred sheep that these islands would carry if they were entirely cleared.

It is regretted that pressure of other duties prevented me from visiting the more outlying reserves, but full advantage was taken when making other departmental inspections of visiting all Scenic Reserves *en route*. By this means, and also through the agency of the local honorary inspectors of scenic reserves, I have been enabled to keep closely in touch with them all. Some items of interest relating to the individual reserves are detailed as follows:—

Chetwode Islands (Nukunuiata).—On this island a colony of white rabbits have in some unknown manner become established, and as it is highly desirable that they be exterminated or kept in check, permission has been obtained from the Hon. the Ministers of Scenery-preservation and Internal Affairs to allow the honorary inspector, Mr. Harold Leov, and Mr. George Webber, J.P., to attend to this matter. Permission has also been obtained for Mr. Harold Leov to catch six pairs of kiwis on the mainland and endeavour to establish them on this island. It is considered that, as the island lies some distance from the mainland, it will make quite a good sanctuary for the protection and increase of various classes of native fauna.

Ship Cove Reserve (Totaranui).—During one week-end, in company with a number of enthusiasts, I visited this historic reserve, and with their help opened up a ditch to drain a swamp. I am pleased to state that although the reserve is visited by numerous tourists and holiday-makers during the year, no damage to the bush was apparent at the time of my visit. Vandals, however, have mutilated to some extent the monument placed on the reserve to commemorate the occupation by Captain Cook. One of these offenders was brought to book by the Captain Cook Memorial Committee, and this action will probably prove a strong deterrent to any future mischief of a like nature. A low-water landing is urgently required on this reserve. A small jetty sufficient for this purpose could be erected for somewhere in the vicinity of £75 to £80.

Kumutoto Reserve.—This is the most popular reserve in Queen Charlotte Sound, being easily accessible by an hour's journey by launch from Picton, and is the favoured venue of many local picnics. During the past year further conveniences and fireplaces have been erected, and also some three miles of foot-track have been made connecting the three bays on the reserve. I would like to see two landing-jetties erected on this reserve for the convenience of the public, particularly the older people, to whom the scramble from launch to dinghy for landing purposes is somewhat of a hardship. I consider two suitable jetties could be erected for a total cost of £100.

Tennyson Inlet Reserve.—This extensive and beautiful reserve is somewhat out of the beaten track, but is nevertheless being visited each year by increasing numbers. The Union Steamship Co.'s t.s.s. "Tamahine" visits this reserve in her fortnightly excursion trips from Wellington during the summer months, and many yachtsmen and visiting launch-owners from across the strait call in and camp there. As was mentioned in my last report, applications have been made for permission to erect a hostel or accommodation-house on this reserve, but consideration has been deferred, since it is recognized that if any such structure is erected it should be proportionate to the potential value of this reserve as a first-class tourist resort.

These three reserves constitute the most extensive and valuable from the popular point of view of the many reserves in the Sounds County. The other reserves are not visited by such numbers. Many of them are small and have been reserved for their picturesque values, being mostly situated on bold headlands at the entrances to the various bays, where they afford the tourist an example of the beautiful scenery that originally obtained in these sounds when the bush reached to the water's edge.

Pohutukawa-trees.—During the year we have successfully established a number of pohutukawa-trees on the reserves in the Sounds District. For assistance in this work I am indebted to several of our honorary inspectors, and in particular to Mr. Newton, launch-owner, of Picton. These gentlemen have assisted with the planting and looking-after of these trees free of charge to the Department.

Pelorus Reserve.—This reserve is situated on the main Blenheim-Nelson Highway, at the junction of the Pelorus and Rai Rivers, and is almost our only remaining unspoilt remnant of the splendid virgin bush with which the Pelorus and Rai Valleys were thickly clothed. The profuseness of beautiful timber-trees excites the admiration of the general public. This reserve is under the control of a local Scenic Board, who are making steady progress with its development as a camping and picnic ground. For assistance they are entirely indebted to local subscriptions, since they make no charge for its occupation. During the last year they erected further conveniences, including two bathing-sheds. The goats which grazed on the blackberry on this reserve were all removed during the year, and I regret to say that the blackberry is again increasing.

Mangamau Reserves.—These reserves, situated between the Clarence and Hapuku Rivers, in the Kaikoura County, are the favoured venue of many week-end campers throughout the year. Apart from the splendid scenery, the coast is famous for its good fishing—crayfish, butterfish, and others of the finny tribes abounding in large numbers, and being easily obtainable from the rocks fronting the beach. Most of the camping-sites are on the Road Reserve, and the Kaikoura County Council supervise and issue permits for the various sites.

Hundalee Reserves.—The beautiful reserves situated south of Kaikoura known as the Hundalee Scenic Reserves are, with their combination of rocky coast and beautiful scenery, easily the most popular reserves in this district from a camper's point of view. Motor campers from all over the South Island, but chiefly Christchurch, visit them in increasing numbers. They are controlled by the Hundalee Scenic Board, who annually during the holiday season appoint a caretaker to allot camping-sites, keep the reserves clean and tidy, and prevent the vandalism that for many years was rampant amongst certain sections of the campers. A small fee is charged for the privilege of camping on these reserves, which money, after defraying the cost of administration, is directed to the provision of further improvements to the reserves in the shape of conveniences, fireplaces, &c., for the campers. Recently the Hon. Minister of Scenery-preservation granted a subsidy to the Board, which, when added to the amount already held in hand for the purpose, will enable the Board to erect a caretaker's cottage. It is the Board's desire, when funds will permit, to install a full-time caretaker instead of part-time as now exists. The Canterbury Automobile Association is actively interested in the development of the reserve, and assists the Board yearly with liberal donations to its funds. The Board is making steady progress with its development of these reserves, and the improved conditions are fully appreciated by the camping public, as is clearly shown by the largely increased number of permits issued during the past season, which were nearly three times as many as those issued during the previous year.

In conclusion, I have to report that during the summer season the various tourist and holiday resorts were taxed to their fullest capacity, the many hostels and accommodation-houses being booked up well in advance of the holiday season, clearly proving the increasing popularity and importance of the Marlborough Sounds as a pleasure resort. Large numbers of campers occupied the numerous bays on our scenic reserves, but no damage has been reported, which shows that where fireplaces and other conveniences are provided, and scenic-reserve notices are posted, the public recognize their obligation to protect these reserves for the benefit of future generations. Many of the Sounds settlers materially benefit from this tourist trade, providing as it does a local market for their farm-produce. It is gratifying to know that the policy of our Department in providing these reserves has helped in this way to benefit the farmers, for the native bush provides a charm to the tourist visiting these Sounds, which if it had been entirely denuded would be lacking. The tourist trade is only in its infancy, and in future years I am convinced that all the larger bays will contain one or more hostels, and the surrounding farms be taken over by those anxious to cater for this traffic. I wish to record my appreciation of the services rendered by the honorary inspectors for supervising the various reserves covered by their appointments; they have been of material assistance to our Department.

SCENIC RESERVES ACCOUNT.

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1929.

<i>Receipts.</i>			<i>Payments.</i>		
	£	s. d.		£	s. d.
To Rents from reserves	504	0 9	By Refunds of rent	21	4 4
Royalties from timber, &c. ..	303	18 2	Scenery-preservation vote		
Amounts received in reduction of vote—			“expenses”—		
Expenditure as per contra ..	1	17 0	‘Cost of acquiring		
Refund of “thirds” wrongly deducted	0	12 6	reserves and effect-		
Balance transferred to Treasury Ad-			ing improvements of		
justment Account	13,351	16 6	a capital nature on	£	s. d.
			reserves	12,567	7 9
			Administration		
			of reserves	629	11 1
			Administration of		
			Trounson Kauri		
			Forest	620	6 3
			Surveys and valuations	23	11 9
			Expenses of Board ..	0	18 9
			Miscellaneous	299	5 0
				14,141	0 7
	£14,162	4 11		£14,162	4 11

REVENUE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1929.

<i>Dr.</i>	£	s.	d.	<i>Cr.</i>	£	s.	d.
To Expenses administering Trounson Kauri Forest	620	9	9	By Accrued rents	552	3	0
Expenses administering reserves	629	11	1	Accrued royalties	579	16	11
Cost of surveys and valuations	23	11	9	Miscellaneous receipts—Credits in re-			
Expenses of Scenery Preservation Board	0	18	9	duction of expenditure	1	7	0
Miscellaneous expenditure	299	5	0	Balance carried down	8,930	16	9
Rebates	3	10	4				
“Thirds” and “halves”	24	16	0				
Writings-off in Suspense—Rents irre-							
coverable	48	8	0				
Interest on capital invested in scenic							
reserves	8,413	13	0				
	£10,064	3	8		£10,064	3	8
	£	s.	d.		£	s.	d.
To Balance brought down	8,930	16	9	By Balance—Accumulated excess of charges			
Adjustment on account previous year	127	18	4	over revenue	38,135	1	9
Balance forward	29,076	6	8				
	£38,135	1	9		£38,135	1	9

BALANCE-SHEET AS AT 31ST MARCH, 1929.

<i>Liabilities.</i>				<i>Assets.</i>			
	£	s.	d.		£	s.	d.
Capital Account—				Land—Scenic reserves	..	..	312,283 19 7
Balance, 1st April, 1928	..	..	186,970 1 0	Sundry debtors—	£	s.	d.
Capital expenditure during year	..	..	12,567 7 9	Rent	..	..	71 16 6
				Royalties	..	..	264 0 0
Less capital repaid	..	..	199,537 8 9				335 16 6
			0 10 0	Consolidated Fund—Amount wrongly			
				credited to Territorial Revenue—			
			199,536 18 9	Rents from leases	..	..	1 3 4
Value of Crown lands set aside as reserves			115,202 13 5	Losses in Suspense	..	..	48 8 0
				Revenue Account—Accumulated excess of			
			314,739 12 2	charges over revenue	..	..	38,135 1 9
Treasury Adjustment Account	..	..	35,804 7 5				
Sundry creditors—	£	s.	d.				
Lands and Survey vote	..	28	12 0				
Department of Agriculture	..	0	3 6				
Compensation payable for land							
taken	..	50	0 0				
			78 15 6				
Rents paid in advance	..	..	1 1 0				
Rents charged in advance	..	..	132 5 1				
Writings-off in Suspense	..	..	48 8 0				
			£350,804 9 2				£350,804 9 2

J. B. THOMPSON, Under-Secretary for Lands.
J. H. O'DONNELL, Controller of Accounts.

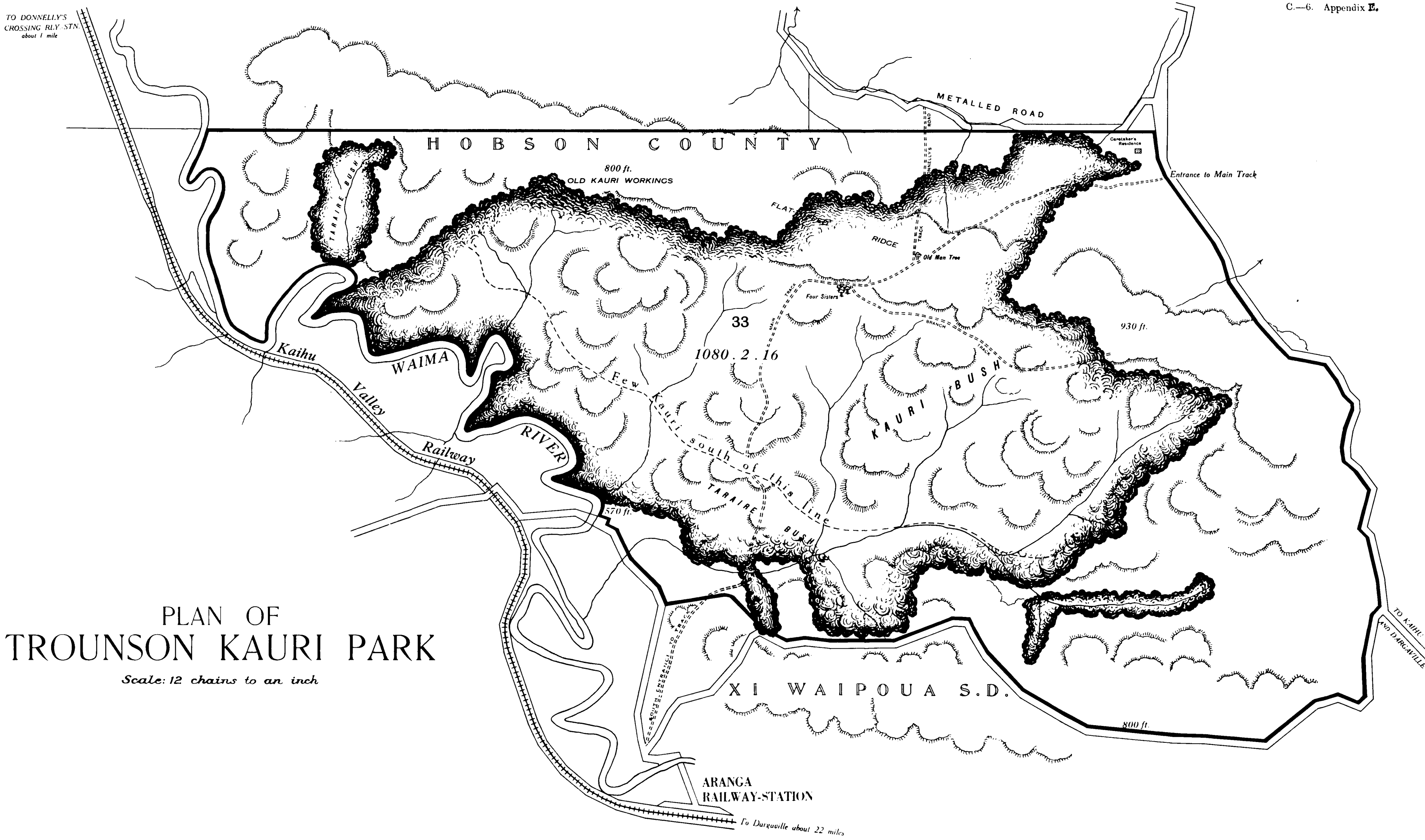
I hereby certify that the Receipts and Payments Account, Revenue Account, and Balance-sheet have been duly examined and compared with the relative books and documents submitted for audit, and correctly state the position as disclosed thereby.—J. H. FOWLER, Deputy Controller and Auditor-General.

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TO DONNELLY'S
CROSSING RLY. STN.
about 1 mile



PLAN OF
TROUNSON KAURI PARK
Scale: 12 chains to an inch

ARANGA
RAILWAY STATION

To Dargaville about 22 miles

TO KAHIU
AND DARGAVILLE

