RECORD

T R. Frazberg
Collection
Book 24

#30147-30946

Collection and Field Note Book

No. 24

(May 3, 1946 - June 9, 1949)

(30147 ---- 30246)

(see next page)

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A BOORUM & PEASE PRODUCT

3 Left Pearl Harbor a bit afternoon, aboard USS LCI 983. Went south for several hours, then started a great circle course for Eniwetok atoll, Marshall Is. Much to my surprise I did not get seasick.

4-12 Cruised along more or less uneventfully, except that on the 9th the boat twisted off a propeller-shaft. Limped along on one screw after that.
The boat is one of the most uncomfortable and unsatisfactory craft I have ever seen for our purpose.
Our bunks are in a square hold under the pilot house. Our officer ~~is~~ in another just forward. In about 20 feet square we have 11 desks. Although theoretically we have ventilation, actually it is so hot in this hold that I find it practically impossible to work. Further, there is no space for a botanist to work.

Our strage space is in another hold, forward of the office. This is cramped and everything so piled up that nothing is accessible.

The crew are a bunch of kids. The officers are all ensigns, all except the engineer about 21 years old. The engineer may be ~~so~~. The skipper, Mack, is a nice young boy, very pleasant and good looking, but who does not carry much weight with the crew. The crew are the usual motley bunch of kids to be found on a navy boat now. Most of them are just in for a short time and not much interested in anything except getting out.

All in all, the selection and outfitting of the boat shows complete incompetance ~~in~~ for anything concerning scientists. Absolutely no attention has been paid to the convenience and comfort that is necessary to get the best work out of such men.

To go further back - the selection of directing personnel shows ~~the~~

exactly the same sort of unawareness of reality.

All, of course, goes right back to the character of the organization - E.L.B., B.E.W., O.E.W., F.C.A., U.S.C.C. — the name changes have brought no change in the fundamental incompetence of the outfit.

The scientific personnel are mostly OK for their jobs. Towne is an intensely enthusiastic youngster - entomologist - a bit too aggressive but the kind that gets big collections. Oakley - entomologist - is a quiet, courteous very hard-working fellow - some years tropical experience - Puerto Rico, Guam, Honolulu. He will accomplish a great deal, too, though with more emphasis on the economic side. Rogers is a soil man, ~~a~~ quiet, competant, but without tropical experience. He will do a satisfactory job. Piper, ground water geologist, ~~is~~ has a keen mind, but no experience with islands. He has a tendency to step on other people's toes a bit, but will do a good job on this survey.

Hozaka - good boy. with considerable initiative, should contribute both to botanical and agronomic phases.
Smith - fisheries man, is a tall, extremely likeable fellow, who knows his business very well. He seems a bit prone to overlook the taxonomists interests, but uses their work competently.
Aki - Hawaiian fisherman assistant to Smith - Certainly the personality of the party.
MacMillan - horticulturist and expedition director - of Roerich Expedition note - is so quiet and grumpy that it is hard to size him up.
Trueblood - economist and chief of scientific party seems to have very little notion of how scientists function. He will gradually get it beaten into his head, but it may be a painful process for the rest of us.
Provencher is a likeable guy who takes care of equipment, arrangements of all sorts. He seems perfectly willing and may prove an asset to the party.

Weather has been about perfect. slight following sea, usually a cross breeze. The ocean has been so blue that no one could describe it. Just to sit and watch it makes up for much of the dirt, smells, and discomfort of the boat.
Read Hall's Lost Island and Nordhoff & Hall's The High Barbaree. Both are beautiful books. Reread Forde "Death hails with Magellan" and read most of "The Leaning Wind" plus a flock of mystery stories.
Worked at intervals on a card catalog of Micronesian plants.

14 lighted Eniwetok at 8 a.m. got in before noon. The skipper, Trueblood + Mac Millan went ashore. The rest of us got ashore in the middle of the afternoon. The lagoon is full of ships. Floating dry docks, tankers, tugs, all manner of things. Eniwetok Island is completely denuded - covered by quonset huts.

Had a good dinner, met a young Lieutenant Angler from Florida. Gosh was quite elated to meet

Went to officers club and had some beer. It tasted very good.

Bishop, Hall, Alpert + Trueblood came from Kwajalein.

14 ~~15~~ Waited around all morning and finally got off in a small landing barge for Igurin). which is still completely wooded. Collected here, but suffered some from the heat. This is on the lee side of the atoll and simply littered with wreckage and junk that has floated here. also everything is covered with oil.

Got soaked by spray

coming back.

Had a good dinner ashore. Moved our junk ashore to the BOQ hut. Met a young lieut. Angle, who was quite excited to meet someone mentioned in the Roaring Wind. Talked to him till midnight.

Bishop + Trueblood left at 9 a.m. for Guam.

15 ~~16~~ Went to Japtan I. on a Picket boat. This island has been considerably messed up, but is very interesting. Some boys stationed here picked me up in a truck, mauled me around where I wanted to go, fed me beer, got me pandanus fruit, etc.

Had a nice swim.

16 Went to Aomon I. in Picket Boat. This is where most of the natives have been placed. Lt. Halspeth, the military govt. official, went with us. He helped us get information from the natives. They are a pleasant but very quiet lot. They seem to have become

rather dependent on the N.G. They still build and sail canoes, but cultivate nothing, make no copra. N.G. has them hunting coconuts and making shell leis, weaving a few coconut leaf baskets and belts, etc. to sell at exorbitant prices to the crews on the island and boats. The prices are fantastic. Ordinary large spotted cowries $1, 4-5. small ones 50¢. leis $1, to $5. Met Craig Brownsmith, interpreter, who has been in U.S. who helped plan and led the assault on Eniwetok. He is a pleasant old fellow. The teeth of the older people are very bad. These people are all to be moved to Kwajalein before the atomic bomb is exploded.

The sailing canoes here are marvelous - deep, narrow hulls 25-30 inches deep, 10-12 wide, outrigger and compensating platform, lateen sail. They can really move. We went ashore and out in one.

17 Stayed on Eniwetok I. Drove around with Dr. Mills, the surgeon, who turns out to be a nephew of Dr. Lambert of Walnut Creek, Cal., the one who was in Fiji, etc. He says he will write to him and introduce me.

Saw wreckage of a mess of U.S. Pursuit planes that were blown to bits when a B 29 were taking off and accidentally dropped her bombs. Certainly made a mess of them.

The gang of Waves here certainly have floated me well.

18 Went to Engebi I., a rather long trip. This islet also has been almost completely denuded. Thus are millions of dollars worth of equipment abandoned here. Had good collecting, in spite of the condition of the vegetation.

The picket boat went back and picked up Trueblood and Hakpetch, took them to

Aoraki. Then came for us. When we got almost back to Aoraki both motors went dead - clogged fuel line. The crew fooled with it for 3 hours. Trueblood & Halcyon came out in a canoe. The crew gave us 2 or 3 times and signalled for help. Just as another picket boat came. They got us going, so both came back together, at 1 p.m.

May 19 - Worked on plants all day.

May 20 - Started at about 8:30 for Tuke. Busy all day going over the presses. Good weather. My drying facilities are sorely taxed. What a birthday! I even forgot it was my birthday.

May 21 - Worked over presses. Terrifically hot down in no. 2 hold. Intended to write a report on Eniwetok but didn't get to it.

DUN MOUNTAIN LINE.

NAMES OF TREES AND LARGER SHRUBS.

(By F. G. Gibbs.)

Dracophyllum spp., Celmisia spp. and near endemic Ranunculus enysii.

On the shingle slips we may find Crasp asclerophylla, Ranunculus haastii, Anisotome Stellarfia roughii, Notothlaspi rosulatum, H. sinclairii, Lobelia roughii and Epilobi epacridea, H. lycopodioides and H. tetrasti

The Raoulia eximia association grows o on greywacke rock. Plants often found epip Celmisia spectabilis, C. viscosa, Aciphylla flavescens.

At the Castle Hill reserve where an ar fenced to preserve the locally endemic Ranu also occur Notothlaspi rosulatum, M. Colens reticulariifolia, Lepidium oligombriolides, Cre (var. rigida), Anisotome enysii, Carmichael Novae-zealandiae, and Senecio haastii.

From Christchurch to Springfield (42 miles) we rise approximately 36 ft to the mile. This area, now almost entirely devoted to mixed arable farming, was originally low tussock grassland, the species including those we will see at our first stop in the Kowai River bed.

This low tussock grassland has been greatly altered in composition by the action of fire, the grazing animal and the introduction of exotic plants. Species which we should find are:- Poa caespitosa, P. colensoi, Festuca NovaeZelandiae, Agropyrum scabrum, Dichelachne crinita, Danthonia semi annularis and D. pilosa among the grasses.

Geranium spp. Oxalis corniculata, Epilobium spp., Dichondra repens, Wahlengergia spp., Lagenophora pumila, Brachycome sinclairii, Helichrysum bellidioides and H. filicanle, Chrysobactron hookeri, Celmisia gracilenta, Raoulia spp. and Senecio bellidioides among the herbaceous plants.

Discaria toumatou, Cassinia fulvida, Leucopogon fraseri, Carmichaelia subulata, C. monroi and C. nana, Coriaria sarmentosa among the shrubs;

And of special interest: Aciphylla colensoi and A. squarrosa, and Hoheria Lyallii at its eastern limit.

On dry rock faces we find such xerophytes as Corokia cotoneaster, Helichrysum selago, Coprosma propinqua and Hymenanthera alpina.

Between the top of the pass and the shingle slips we find a very varied bag of Viola cunninghamii, Senecio lyallii, Danthonia flavescens, Coprosma spp., Hierochloe redolens, Hebe spp., Dracophyllum spp., Celmisia spp. and near the creek the local endemic Ranunculus enysii.

On the shingle slips we may find Craspedia alpina, Poa sclerophylla, Ranunculus haastii, Anisotome carnosula, Cotula atrata, Stellaria roughii, Notothlaspi rosulatum, Haastia recurva or H. sinclairii, Lobelia roughii and Epilobium pycnostachyum, Hebe epacridea, H. lycopodioides and H. tetrasticha may also be found.

The Raoulia eximia association grows at about 3500 - 5000 ft on greywacke rock. Plants often found epiphytic in the cushions are Celmisia spectabilis, C. viscosa, Aciphylla colensoi and Danthonia flavescens.

At the Castle Hill reserve where an area has been specially fenced to preserve the locally endemic Ranunculus paucifolius, there also occur Notothlaspi rosulatum, M. Colensoi (syn. decora), Poa aciculariifolia, Lepidium sisymbrioides, Oreomyrrhis andicola (var. rigida), Anisotome enysii, Carmichaelia monroi, Crepis Novae-zealandiae, and Senecio haastii.

Aoman. Then came for
us. When we got almost
back to Aoman Creek

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the creek the local

DUN MOUNTAIN LINE.

NAMES OF TREES AND LARGER SHRUBS.

(By F. G. Gibbs.)

THE BEECH FAMILY

The beech forest through which the line passes is composed for the most part of two species, **Nothofagus fusca** (the large toothed beech) and **Nothofagus truncata** (the clinker beech) together with hybrids between them. Both species have leaves about an inch long, but the clinker's leaves have much shorter, blunter teeth and the tip of the leaf is rounded with a few short teeth. N. fusca has much more deeply cut teeth and the tip of the leaf is pointed. **Nothofagus Menziesii** (the silver beech) is first met with near the Third House Clearing and is thereafter fairly plentiful. The leaves are oblong, half an inch or less long, thick and polished, with numerous short teeth. The whitish bark of the trunk is marked with horizontal bands. **Nothofagus Solanderi** (the entire leaved beech) grows chiefly in the valley bottoms, but several specimens occur near Second House Gully. It has thin oblong leaves about half an inch long or less and no teeth. **Nothofagus cliffortioides** (the mountain beech) has leaves somewhat like those of the previous species, but thicker and more triangular and pointed. This is the only beech to be found close to the line just before it emerges from the bush on to the Mineral Belt. **Nothofagus apiculata,** of which there is a good specimen just above the line at the beginning of the Third House clearing is almost certainly not a true species, but merely a hybrid between **Nothofagus Solanderi** (which it closely resembles) and one of the toothed species, for it has the Solanderi leaf with a few minute teeth. It should be specially noted that the "kamahi," which is perhaps the commonest tree of all in the immediate neighbourhood of the line, is not a beech although it is generally called "red birch" by bushmen. It has toothed leaves usually much larger than those of any beech, and racemes of flowers resembling those of the koromiko. It will be referred to later as **Weinmannia racemosa.** The heath, **Gaultheria antipoda,** has leaves like **N. Menziesii** and is often mistaken for a beech, but the branchlets are covered with soft brown scales.

THE CONIFER FAMILY

No examples of miro, matai, kahikatea or true totara are to be found, although specimens of the two latter occur near the road in the Brook Street Valley. In several of the gullies along the line, the well known drooping foliage of the rimu, **Dacrydium cupressinum,** can be observed. Near Coad's Creek at the end of the bush the handsome dark foliage of the mountain pine **Dacrydium Bidwillii,** will be seen.

The branches generally bearing two entirely distinct kinds of leaves, one set scale like, closely appressed to the branchlets and the others yew like. In places on the Mineral Belt, especially on the Dun Mountain, occurs the smallest pine in the world, **Dacrydium laxifolium,** which with its minute leaves sometimes straggles along the ground for a foot or more, but may come to maturity and bear fruit when only an inch or two high. The true totara with its good timber and coarse stringy bark does not seem to grow anywhere along the line, but its worthless relative, **Podocarpus Hallii,** with thin papery bark often resembling that of the fuchsia and thick, sharp pointed leaves often over an inch long, is fairly plentiful. The alpine totara, **Podocarpus nivalis,** with much shorter blunter leaves and generally a mere bush straggling along the ground is found in a few places on the Mineral Belt. Near Coad's Creek and on the higher slopes of the Wooded Peak, is found the South Island cedar, **Libocedrus Bidwillii,** generally, like the mountain pine, bearing two kinds of foliage, but easily recognised by a straight tapering stem bearing brown bark which comes off in long strips. **Phyllocladus alpinus** (the mountain toatoa) grows plentifully near and also on the Mineral Belt. What appear to be its thick woody leaves are really flattened branchlets.

Tentatively shot down in
No. 2 hold. I intended to
write a report on Eniwetok
but didn't get to it.

THE DAISY FAMILY

Three of the daisy trees are at the present time covered with magnificent heads of daisy like flowers. **Brachyglottis repanda** (rangiora) has large roundish leaves, sometimes five inches across, and having the leaf stalks and the whole of the undersurface of the leaf completely white. **Olearia Cunninghamii** has toothed leaves four or five inches long and about two inches wide, with an undersurface of greyish white or buff colour. **Olearia arborescens** (formerly nitida) is easily recognised by leaves having a characteristic satiny under surface. **Olearia virgata** on the Mineral Belt has narrow leaves less than inch long and whitish underneath. The small daisy flowers grow close to the branches **Cassinia fulvida,** a form of tawhini, grows just beyond the Third House and on the Mineral Belt.

THE IVY FAMILY

None of these climb like the English ivy but are trees or bushes. **Nothopanax arboreum,** the five finger, grows all along the line and in many gardens in town. Its leaflets have stalks about an inch long. **Nothopanax Colensoi** is found from the Third House to the Mineral Belt. It resembles the former, but its rather thicker leaflets have no stalks, though a strong stalk supports the spreading fan of leaflets. **Nothopanax simplex** in its adult form resembles a **N. arboreum** with only one finger to each leaf instead of five or seven. Its juvenile leaves are utterly different and are often mistaken for ferns. It is found beyond the Third House **Nothopanax anomalum** is quite unlike all the former species, looking like a wire netting bush with small single leaves about a quarter of an inch long. It is not plentiful but one specimen grows on the track at the Third House clearing and many more on the dry spurs of the Fringe Hill. **Schefilera digitata** resembles N. arboreum but its long narrow leaflets are much thinner and more papery and its long drooping racemes of fruit are quite unlike the rigid erect bunches of berries characteristic of the "five finger." It grows chiefly in damp gullies.

THE KARAMU FAMILY

At least a dozen species of **Coprosma** are common along the line, and the low undergrowth growing on the line itself is chiefly composed of some of the species. All are distinguished by a small triangular growth (interpetiolar stipule) on the branchlet between the bases of the stalks of the opposite leaves. **Coprosma grandifolia** (Kanono) is the plant from which the Maories obtained their best dyes ,and is very plentiful. Its large elliptical leaves, sometimes eight inches long, have a dark green raised midrib on the upper side. **Coprosma lucida** has large shiny leaves with a raised yellow midrib. **Coprosma robusta** has duller, smaller leaves with a sunken yellow midrib. **Coprosma linariifolia** with very narrow leaves about two inches long and **Coprosma Cunninghamii,** probably a hybrid with leaves varying much in size and shape ,are found chiefly in Fourth House gully. **Coprosma foetidissima** (stinkwood) has long stalked leaves which give out a most offensive odour when bruised. The species rhamnoides, parviflora, propinqua, Colensoi, microcarpa and cuneata all have small leaves and generally grow to only moderate sized bushes, so will not be described here.

THE HEATH FAMILY

Gaultheria antipoda has leaves resembling those of Nothofagus Menziesii and is often called a "birch," but it has hairy branchlets and never grows to more than a tall shrub **"Cyathodes acerosa** with short prickly leaves standing out straight all round the branchlets and brown button-like fruit is most plentiful outside the bush. Cyathodes **empetrifolia** with still shorter leaves is found sparingly on the mineral belt. **Leucopogon fasciculantum** is often mistaken for a manuka, but its leaves are longer and stand out straight from the branchlets. **Dracophyllum longifolium,** the grass tree, with foliage like tufts of grass at the ends of the branches, is found chiefly near the end of the bush. Some smaller but similar species, Urvilleanum, rosmarininifolum and probably uniflorum, are plentiful on the Mineral Belt

THE MYRTLE FAMILY

Leptospermum scoparium, the red manuka, has prickly leaves, large flowers and large capsules which can be found on the branches all the year round. It is seldom more than a tall shrub. **Leptospermum ericoides,** the white manuka, which more often grows into a tree, has softer, narrower, less prickly leaves, while the flowers and capsules are much smaller and the latter soon fall from the branches. **Metrosideros lucida,** the mountain rata, is well known to everybody. The climber, **Metrosideros hypericifolia,** with its double rows of small leaves and pinkish white flowers, occurs sparingly.

THE MATIPOU FAMILY

Suttonia australis (formerly Myrsine Urvillei), the mapou or matipou, with its reddish yellow branches and crinkly leaves, is often used in town as a hedge plant, though the Maori name is often misapplied to another favourite hedge plant with black branches, namely **Pittosporum tenuifolium. Suttonia divaricata** occurs near the mineral belt and is easily recognised by its small heart shaped leaves and the peculiar drooping habit of its stiff wiry branches.

THE PITTOSPORUM FAMILY

Pittisporum tenuifolium, or kohuhu, with its black branches and small light green crinkly leaves, is plentiful in our town gardens, especially as a hedge plant. **Pittosporum eugenioides,** the tarata or lemon tree, is also common about town. The long narrow pointed leaves are of a bright yellowish green colour and give out a pleasant lemon scent when bruised. **Pittosporum divaricatum** is a densely twiggy shrub growing in the bush near the mineral belt. Its minute leaves are most varied in shape, but identification can usually be obtained from the small purple flowers and the characteristic pittosporum capsules enclosing black sticky seeds

THE SAXIFRAGE FAMILY

Weinmannia racemosa, the kamahi, often erroneously called a red birch or bastard birch, is probably the commonest tree in the secondary growth along the line and Dr. Cockayne says it is the commonest tree in New Zealand. The reddish much toothed leaves vary considerably in size but are generally about an inch and a-half long. The racemes of beautiful pinkish flowers are just coming out. In the young stage the leaves are often divided in to three leaflets. **Carpodetus serratus,** the puta puta wheta, sometimes called by Nelson bushmen the Christmas tree, has beautiful leaves of deeply mottled green and bears at the end of the year a profusion of white starlike flowers.

THE KOROMIKO FAMILY

The well known koromiko, **Veronica** (or Hebe) **salicifolia,** with its beautiful racemes of bluish white flowers, and its leaves resembling in shape those of a willow, is plentiful in places. A form with much narrower leaves growing by the zig zag track is called **Veronica angustifolia.** In Fourth House gully two species with smaller leaves are met with. **V. Menziesii** with erect branches, and **V. vernicosa** with drooping branches, but there is also an interesting series of intermediate hybrids. On the mineral belt **V. buxifolia,** the "native box," is plentiful

but didn't get to it.

MISCELLANEOUS

Aristotelia racemosa, the mako mako, wineberry or fire tree, springs up in profusion where fire has destroyed the bush and is much in evidence among the dead trees at the beginning of the Third House clearing. It has large thin heart-shaped leaves with numerous teeth round the edge, and bunches of drooping pink flowers. **Aristotelia fruticosa** with its reddish bark is one of the densely twiggy plants to be found on the mineral belt. **Elaeocarpus Hookerianus,** the pokaka, with its juvenile twisty wisty habit and foliage so utterly unlike that of the adult, is not plentiful ,but when in flower is one of our most beautiful native trees. **Griselinia littoralis,** the kapuka or broadleaf, has thick leathery leaves which are greedily eaten by the deer. This tree is often mistaken for the kawaka (Corynocarpus laevigata), but the latter shows the veins plainly on the underside of its leaves, while the broadleaf does not. **Melicytus ramiflorus,** the mahoe or whitey wood, with toothed oblong leaves several inches long, light coloured bark and small flowers growing out of the main branches, is plentiful at the beginning of the line. The place of the ordinary palm lily or cabbage tree is taken by its close relative **Cordyline Banskii,** a smaller more slender plant whose leaves narrow into a long thin stalk. **Drimys colorata** has green leaves often strongly blotched with red which are very hot to taste. On the zig zag track are found a few specimens of **Dodonaea viscosa** with its long blunt elliptical light green leaves, and hop like fruit. Several specimens grow in upper Collingwood Street and other parts of the town. The beautiful but poisonous tutu, **Coriaria ruscifolia,** is well known to all, as is also **Fuchsia excorticata** with its edible berries. **Discaria Toumatou,** the wild Irishman or **matagouri,** occurs on the zig zag track. **Phormium tenax,** the so-called flax, with reddish flowers, erect pods and red margined leaves, occurs before the bush is entered. The less valuable **Phormium Colensoi** [illegible] green flowers, drooping [illegible] less rigid leaves, grows on the [illegible] belt. The beautiful mistletoe, which said by the officers of the Forestry Department to do much damage to the beech timber ,is the species **Elytranthe tetrapetala.**

CLIMBERS OR LIANES

The supplejack **Rhipogonum scandens** is plentiful on the hill side below the line in many places. The lawyer, **Rubus australis,** with its prickle covered leaves ,is only too much in evidence. **Muehlenbeckia australis** of the dock family, with many of its leaves shaped somewhat like a fiddle is common. **Clematis hexasepala** with its beautiful sprays of white flowers is well known. **Clematis Colensoi,** climbs over the mapuka bushes before the bush is entered. The rata, **Metrosideros hypericifolia,** has been described as a member of the myrtle family.

Evening Mail Print

[illegible] could doubt get to it.

MOUNTAIN PLANT ASSOCIATIONS - NELSON, N.Z.

A short distance from the city of Nelson there is an area known as the "Mineral Belt". This is a zone of boulder-strewn land-surface, often dun coloured in appearance, underlain by peridotite and serpentine rocks, which extends from D'Urville Island, in Cook Strait, south west for a distance of sixty miles. It is an almost continuous band, but it disappears for about 8 miles between the valleys of the Lee and Serpentine Rivers. At its narrowest part the Mineral Belt is 200 yards wide, and it reaches its maximum width of 7 miles 50 chains in the vicinity of the Dun Mountain. The area occupied by the Mineral Belt is about 100 square miles.

The vegetation of the Mineral Belt presents a striking contrast with that of the neighbouring land-surface, which is clothed with luxuriant forests of southern-beech (Nothofagus spp.). On the Mineral Belt there are three principal plant-associations.

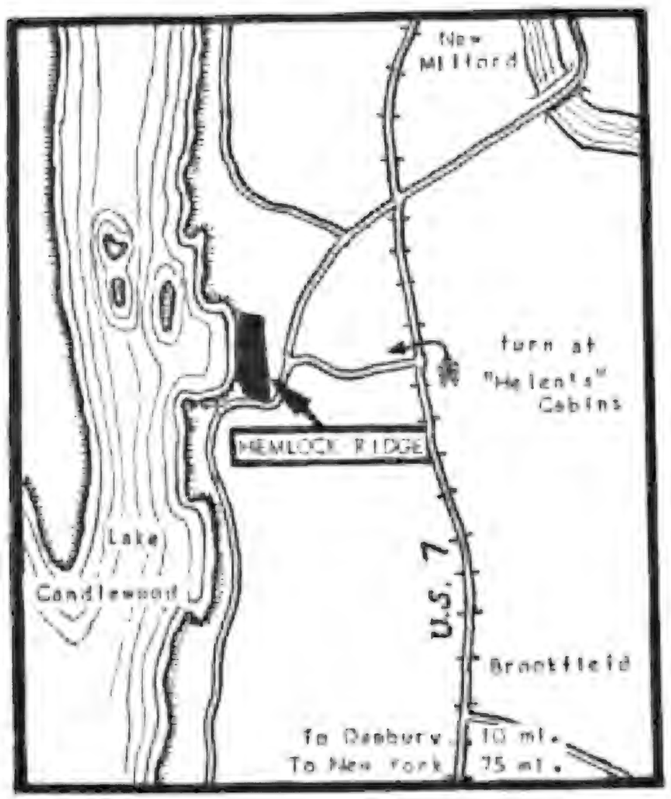
1. SCRUBLAND. Found near the margin of the Belt and comprising stunted species common to the adjacent forest, such as Griselinia littoralis and Nothofagus fusca. Then there are other shrubs, not so reduced; these are :- Cassinia Vauvilliersii var., Coprosma propinqua, Dracophyllum longifolium var. and Leptospermum scoparium var. In this association there are a number of small herbs, e.g. Gleichenia australasica, Calochlaena dubia and Hymenophyllum pulcherrimum var.

2. OPEN SCRUBLAND. Here occur the most characteristic plants, Cassinia Vauvilliersii var., Dracophyllum rosmarinifolium, Kirkophyllum Sidowayi, Hymenanthera dentata var. alpina, Veronica buxifolia var., V. Lyallii var., V. pinguifolia var. Pimelea suteri and Muehlenbeckia axillaris. The herbs are :- Dyscolia Munroi, Notothlaspi australe, Gentiana corymbifera, Aciphylla aromatica and A. filifolium.

3. TUSSOCK GRASSLAND. The dominant plant is Danthonia Raoulii var.; sub-dominant are Poa colensoi Cockayne and Astelia montana var.

The above information is adapted from a paper by A.P. Watts, in the Transactions of the N.Z. Institute, pp. 230-244, 1913. The title of this paper is: "Notes on the Autecology of certain plants of the Peridotite Belt, Nelson: Part I - Structure of some of the plants (No.1)."

May 22



HEMLOCK RIDGE ON CANDLEWOOD LAKE

May 22

woman. Then came for us. Letson we got almost back to Cornwallis both motors went dead - clogged fuel line. The crew fooled with it for 3 hours. Finally + Halifax came out in a car. The crew gave us 2 or 3 times and regularly to help. Just as another picket boat came. Then got our going. so both boats back together, at 10 p.m.

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May 22

1948 Virginia Md.

" Sept. 30 - 2 mi. s. of Fairfax Co. Va. Pine woods with the usual association of Chimaphila, Goodyera, Mitchella, etc.

30147 Mitchella repens L. abundant on ground under pines.

" Oct. 3 - across from River Haven South River, Anne Arundel Co. Md. wooded bluff of Collington loam soil, mixed pine and hardwood

1 49 Pinus echinata small colony, unusual here

" Oct. 9 - ½ mi. s. of Merrifield, Fairfax Co. in dense young pine stand.

1 49 Corallorhiza occasional in clay covered with pine needles

prostrate, dark shiny green, fruit scarlet. One fruit with one calyx-lobe & in each dish enlarged and showy. This fruit also has a ring around it, like a secondary calyx ring about half way down, not quite regular.

2 m. Tree 10 m. tall, needles mostly in pairs, very occasionally in 3's.

lower petal white, spotted with purple; upper white.

1943 Virginia

Oct 17. Dyke Potomac River Below Alexandria
estuarine swamp - mud-flat
covered with small
? acuminata trees with
a second story of various
shrubs, ? not shown story
of taurinus, etc

30/50 Alnus
occasional

51 Cornus
occasional

Oct 17 - West Grove Potomac River
below Alexandria
Swampy flood plain
extends for perhaps 150 m
from shore then an
enormous expanse of
tidal flat terminated by
spartina, typha etc
At outer edge of this flat
visible from edges of swamp
perhaps 1 km out is a
fringe of trees, suggesting
a probable origin for the
flat from outer edge of Typha

Outer edge, next to deep
water in the river higher
and firmer than rest of
flat Herons counted on an ash
tree about 75' The outer
edge being cut away by wa

shrub 2 m. tall

shrub 2 m tall, stems
brownish

In the water of the
marsh were seen
a number of large
wading turtles,
apparently feeding
on the vegetation

1948 Maryland – Va.

Oct. 24 –
Broad Creek, South River
brushy-wooded bluff
above tide water 15 m.

3 192 Quercus montana
common 30147

2 53 Quercus stellata Wang.
occasional on slopes 30150
51

3 54 Quercus alba L.
common 30889

2 Myrica ~~cerifera~~ pensylvanica Lam.
common

56 Fagus grandifolia ~~&~~ & subsp. caroliniana (Marsh.) Ashe
occasional 30909–25 Conn. trip

57 Quercus marilandica Muench
common 31022–31099 N. Carolina

3 58 Viburnum acerifolium L.
occasional

3 59 Carya stellata
occasional

2 60 Quercus velutina Lam.
occasional

Oct. 30 – Bancroft Reservoir
Fairfax Co. Va.

46 Prunus
in edge of forest

Oct. 31 – South Arlington
Arlington Co.
Abandoned clay pits

42 Quercus
steep slope of brushy bank

all.

to.

small tree

sapling 2.5' in. calp.

shrub 1.5' in calf

1948 Maryland – Va.

Oct. 24 –
Broad Creek, South River
brushy wooded bluff
above tide water 15 m.

3 0 192 Quercus coccinea — small tree
2 53 Quercus coccinea — tree 8 m. tall
3 54 Quercus coccinea — tree 10 m. tall.
2 51 Myrica cerifera — shrub 1 m. tall.
2 56 Fagus ferruginea — small tree
3 57 Quercus coccinea — small tree.
3 58 Viburnum acerifolium — shrub 1 m. tall.
3 59 Carya ovata — stump sprouts.
2 60 Quercus velutina — small tree
+ occasional

PLANTS OF VIRGINIA
FAIRFAX Co.

Vibur. acer.

Loc. Sleepy Hollow, 1-1½ mi. S. of FALLS CHURCH
Coll. along Tripps Run
Habitat Wood on sandy gravelly clay
Date 7/27/1948 Alt. 80 m.
Coll. H. R. Fuller & Lee No. 1,122
Remarks Lee

Oct. 30. Barcroft Reservoir
Fairfax Co. Va.

62 Prunus — sapling 2.5 m. tall.
in edge of forest

Oct. 31 – South Arlington
Arlington Co.
Abandoned clay pits

42 Quercus — shrub 1.5 m. tall
steep slope of brushy bank

1948 Maryland – Va.

Oct. 24 –
Broad Creek, South River
bushy-wooded bluff
above tide water 15 m.

3 152 Quercus montana — small tree
common

2 53 Quercus stellata Wang. — tree 8 m. tall
occasional on slopes

1 54 Quercus alba L. — tree 10 m. tall.
common

2 55 Myrica ~~cerifera~~ pensylvanica Lam. — about 1 m. tall.
common

1 56 Fagus grandifolia f. pubescens Fern. & Rehd. — small tree
occasional

1 57 Quercus marilandica Muench. — small tree.
common

1 58 Viburnum acerifolium L. — shrub ½ m tall.
occasional

3 59 Carya stellata — stump sprouts.
occasional

2 60 Quercus velutina Lam. — small tree
occasional

Oct. 30 – Bancroft Reservoir
Fairfax Co. Va.

1 61 Prunus — sapling 2.5 m. tall.
in edge of forest

Oct. 31 – South Arlington
Arlington Co.

3? 62 Quercus — shrub 1.5 m Tall
Abandoned clay pits
steep slope of bushy bank

1943 - ~~Jan~~ Va.

30163 Acer
3 common in woodland in
ravine in mass of fine
1 64 leaves
on seen —
3 66 flatten
in fern & grass, last
in low mt. of plant

" Nov. 6 - near confluence of
Lubber Run with Four Mile Run.
Ravines with oak forest,
with some Rhododendron,
Platanus, a few young Fagus,
along stream Carpinus & Ilex.
On Lubber Run Kalmia is
abundant on west-facing
slope, almost absent on opposite,
but on Four mile Run it is
abundant on northeast slope,
along with Vaccinium & Rhododendron.
" Vaccinium
occasional on steep side of ravine

arlington Co.

tree 1 in cult

sapling 1 in Tuft

shrub 1.5' m. tall, younger
stems green, reminding
leaves rose-orange.

VV Nov. 7 - Bancroft Reservoir, Holmes Run - Tripps Run Confluence, wooded valley with dam and reservoir, woods of Pinus virginiana & of oak and other hardwoods, cut by ravines, slopes with Kalmia latifolia and other Ericaceae, some with Polystichum acrostichoides

30 67 Gaylussacia baccata — shrub 0.4 m. tall.
common on slopes with other Ericaceae in deciduous woods

3 68 Hypericum gentianoides (L.) BSP. — shrub 1 ft. tall
common in recent clearing or disturbed ground

3 69 Berberis thunbergii — shrub 0.3 m. tall, fruit scarlet
rare in edge of woods

1 70 Jannichellia — submerged
common around margin of reservoir

VV Nov. 19 - east of Tripps Run, 1 mi. S. of Falls Church, second growth thickets.

3 71 ~~Paulownia tomentosa~~ Catalpa — shrub 1.5 m. tall.
occasional

3 72 Lonicera morrowii Gray — shrub 1.5 m. tall.
occasional

3 73 Cornus amomum mill. — shrub 2 m. tall, stems dark reddish.
occasional in low places

3 74 Alnus serrulata Willd. — shrub 2.5 m. tall.
common in low places

3 75 Acer rubrum L. — small tree 4 m. tall, stems red.
common

1948 Virginia

Fairfax Co.

30176 Fraxinus americana — small tree 4 m. tall,
3 common locally in low places — young twigs olive-gray.
3 77 Diospyros virginiana L. — young tree 2 m. tall.
common
3 78 Catalpa — young tree 4 m. tall.
rare
3 79 Viburnum prunifolium L — tree 5 m. tall
common
3 80 Viburnum — shrub 2.5 m. tall
local

Nov. 20 Bancroft Reservoir, Holmes Run, Fairfax Co.
rolling wooded area

1 81 Prunus — shrub 1.5 m. tall
rare
1 82 Rhododendron maximum (L.) Torr — shrub 3 m. tall, buds dark red.
local, on rocky knolls
3 83 Amelanchier — shrub 1.5 m. tall
local in deciduous woods
4 84 Rhododendron — shrubs 1 m. tall.
just above high water level, margin of reservoir
3 85 Corylus — shrubs 1.5 m. tall.
occasional in thin woods
4 86 — enlarged bases fleshy
rare in woods
1 87 Epifagus — parasitic on roots of Fagus
about base of large tree of Fagus, in patch of Fagus on rocky knoll
1 88 Lonicera canadensis — shrub 1 m. tall
wet low place

1948 Virginia, Maryland

30/39 Lindera benzoin
common in low places.

" 90 Carex
common in mud of swamps

" " Dec. 1 - Potomac River at Glen Echo, Montgomery C. Md.
along canal tow-path.

" 91 Acer Negundo L.
common

" 92 Morus alba L.
common

" " Dec. 4 - Columbia Pike 1½ mi. w. of Bancroft Dam, a. w. of Bancroft Reservoir, Fairfax Co. solid stand of Pinus virginiana with thick layer of fresh and disintegrated leaves.

" 93 Monotropa hypopitys L.
local, forming small colonies.

" 94 Chimaphila maculata (L.) Pursh.
very common

shrub 2 m. tall, aromatic when broken, berries not ripe yet.

shrub 2 m. tall (others are trees), twigs green, spreading thinly

tree 5 m. tall, larger branches yellowish olive; leaves on ground, but not dried up yet.

dried.

leaves dark dull green with pale markings

1949 Virginia
1949

VV Dec. 5 - Bancroft Reservoir and Holmes Run, Fairfax Co.

30195 Populus
3 common close to reservoir

3 96 Populus
common close to reservoir

1 97 Buddleia
rare, one plant seen in clearing in woods near reservoir.

VV Jan. 8 Sleepy Hollow, Tripps Run 1 mi. S. of Falls Church abandoned field on gentle slope - abandoned 4 years, Andropogon dominant

1 98 Andropogon
rare, with # 30197

2 99 Andropogon
common, dominant

VV Jan. 16 - Between Leesburg Pike and Bancroft Reservoir

30200 Saccharum sinense
ca. abundant, completely dominant in old fields in this vicinity, spreading sparingly into woods.

~~slender~~ slender tree ~~2~~ 9 cm. thick, 7 m. tall, bark olive gray, 23 annual rings.
young sapling 1.5 m. tall.

slender shrub sparsely branched. 0.7 m. tall.

caespitose, somewhat of reading
caespitose, erect

large clumps, each 2 ft. tall.

1949 - Hawaiian Islands.

Jan. 30 - Special AAC. flight to New Zealand left Honolulu at 2:30 p.m. and flew to Hawaii, passing Kauai + Kahoolawe. On Kauai erosion is still serious on the western end of the plateau and on the south-east end of the island. Most of the rest was covered by clouds. On Kahoolawe almost the whole plateau was eroded clean of vegetation, bright red in colr. On Kauai the ravine mouths on the west end were marked by great flags of red silt in the water, though running streams were not noticed. (Photos. Kodachrome Roll #1)

On Mauna Kea a great deal of snow was seen near the C. On Mauna Loa the snow was thin but extended far down the slopes.

Several flights were made over and by the eruption now in progress in Makaweowco Caldera. A large spatter cone was evident which may have been the one built in 1933. A fountain of lava, perhaps 100-200 ft. high was playing, supplying enormous quantities of highly liquid lava. This had filled Makaweowco

to the lowest point in the im, possibly covering the whole floor (all snow melted off the crater floor. A lava cascade was spilling over into South Crater which it had filled, and a rapid flow had extended, with three prongs, a considerable distance down the S.W. (R) slope. This flow showed a red streak in the center, which seemed to be still incandescent lava.

Just west of the fountain on the outer slope, was a large bed of gray-brown ash, with no snow. Its origin and the reason for lack of snow were not evident. A large column of bluish "smoke" rose to a great height over the eruption.

Around the caldera at a short distance were secondary concentric faults, connected with the caldera formation. The edges of the caldera were abrupt cliffs, obviously the result of down-faulting. (Photos. Kodachrome Roll #1)

1949 - Canton I. (Phoenix group)

Jan. 30-31 stopped at Canton for an hour and a half in the middle of the night

A.F. & L.H. Walker

Around the airstrip is extremely disturbed coral rubble with patches of Cenchrus echinatus and Cleome viscosa. With this are some Portulaca (Kuntzeana? + oleracea?), Boerhavia diffusa, Lida fallax, and one patch of extremely dwarfed tufts of Eragrostis whitneyi (vel aff.).

The beach on lagoon beach is in places extremely steep, other places very gently sloping. In the latter places the sand is of a

10201 1. Lida fallax Walp.
abundant, forming low scrub
02 Cenchrus
abundant, forming dense patches
07 Sesuvium portulacastrum L. or
09 Sesuvium portulacastrum
abundant on saline flats near inner beach
05 Sesuvium portulacastrum or picum
10206 Eragrostis whitneyi Fosb.
abundant locally near inner beach

Sesuvium portulacastrum on Canton Island Aug. 19, 1936

13207 N. side of lagoon Canton Island
Christmas Island

30203, 30204, 30205

"Jan. 30-31. stopped at Canton for 3 hours and a half in the middle of the night. To the east of the field was the lagoon beach (Sesuvium portulacastrum, Cenchrus echinatus, Tribulus cistoides, Lida fallax, Boerhavia diffusa, and Eragrostis whitneyi). Steep in places, but in other places gently sloping. Sand grayish green. Plants were scarce, very stunted, and white, prostrate, leaves more or less succulent, glaucous green. Plants were

1949 Preston ? (Pliocene fossils)

T.P.1
Col 10

102
3

4

9 ft) near river head
10 ft) Terebratula patulacostata n. sp.
11 ft 6" Crassatella whitneyi Ford.
abundant locally near river head

near inner beach
Interscium portulacastrum = pisum
Craginostis orbitolaga Fok.
abundant locally near inner beach

Messung

30101 Sida falcata
12 Malvastrum coromandelianum
17 Corchorus depressus
Tribulus terrestris
9 Tribulus
11 Triumfetta
12 Triumfetta grac
1 Pavonia hyperici folia
13 Urena sinuata
Abelmoschus ficulneus
Hibiscus (Bud 40 at 30711 - Leaves 4 at 30710)
Sphaeranthus indicus
Verbesina Calendula
37 Dicoma
38 Dicoma
90 Lobelia Erinus
16 Barleria obovata
30005
3017 Xanthium
7 Achyranthes aspera
92 Alternanthera
30021 Pupalia lappacea
Mollugo pentaphylla
Glinus
Portulaca
Trianthema
Gisekia pharnaceoides
31701

Less than right as shrubs
30725 Dianella
50 Scaevola crassifolia
27 Phyllanthus glaucus
Muehlenbeckia
Asparagus denudatus
Solanum ainsliae
30323 Heliotropium lasiocarpum
Hydrolea
Leucas biflora
Pupalia lappacea
Boerhavia diffusa
Portulaca oleracea
Trianthema
Gisekia pharnaceoides
11 Verbesina
Ammania multiflora
39
Gnaphalium
89 Trichomanes
Acacia
76 Lebronnecia platyloba
Acacia ancistrocarpa
Phyllanthus
40767 Dicrostachys
Cleome

Tufts stiff

Compositis not hitherto found in Fiji. Probably common

Missing

30201 Lida pallax
06 Eragrostis obtusa
07 Boerhavia diffusa
08 ? Portulaca cutis
09 Portulaca
11 Euphorbia
12 Tournefortia gnaphalodes
13 Cordia sonchifolia
14 Heliotropium polyphyllum (but look at 30340 - leaves of same!)
30311 Nicotiana
11 Euphorbia eremia
30 Veronica peregrina
37 Drosera
38 Drosera
90 Lobelia pinifolia
96 Ouvirandra alternans
30415
30507 Carmichaelia
17 Crotalaria globiceps
92 Wahlenbergia
30621 Podocarpus
24 Nothofagus menziesii
29 Galium
46 Pittosporum tenuifolium
64 Veronica
65 Hebe salicifolia
73 Pittosporum dallii
30702

Less than eight no check

30725 Discaria
30 Pseudopanax crassifolium
50 Olearia lanigera
60 Muehlenbeckia
62 Griselinia littoralis
90 Solanum aviculare
30727 Coprosma lucida
20 Hydrocotyle
23 Elaeocarpus hookerianus
41 Griselinia littoralis
43 Pittosporum eugenioides
61 Olearia ilicifolia
76
30811 Veronica
15 Aciphylla
29
33 Gunnera
39 Trichomanes
30820 Ileana
56 Schizaea pusilla
62 Ileana simplex
64 Ourisia macrocarpa
69 Phyllocladus alpinus
30767 Dracophyllum
77 Olearia fra

30772 Drosera obovata
21 Drosera
52 Veronica
93 Veronica
30807 Ranunculus
10 muelenbeckia
11 Lonicera tle
37 Drosera
41 Pennantia insularis
45 Drosera oblata
46 muehlenbeckia
47 Notiofagus fusca
51 Ragenophora
54 Pittosporum obcordatifolia
60
61
62 Nothofagus menziesii
63 aristotelia
64 Nothofagus cliffortioides.
65 Nothofagus cliffortioides?
66 Pratia
67 Helichrysum

3076 Carmichaelia
3080 Pratia
Lonicera

on 1949 - Canton D. (Phoenix group)

pinkish and characte.
On the beach Tumbinais
sp. is cast up in quantity
to the east of the field,
near the lagoon beach,
and flats of Scaevium
portulacastrum, quite
variable in leaf size
and shape, but with
the leaves generally more
or less obcit (and rapidly grow)
away from the beach in
an area of low
scrub of Lida Galbana (?)
about 0.7 - 1 m. tall.
Around some of the
buildings Pluchea odorata
is very well established,
with one bush about
1 m. tall and many
smaller ones, flowering.

shrub 0.7 m. tall. flowers
orange.

green — prostrate, leaves more or less erect, very thick, glaucous green. flowers white.

tufts stiff

1949 - Canton I. (Phoenix group)

Jan. 20-21 stopped at Canton for an hour and a half in the middle of the night

+ R.F. & E.H. Walker

Around the air base is extremely disturbed coral rubble with patches of Cenchrus echinatus and Cleome indica. With this are some Portulaca (Lutea (+ oleracea?)), Boerhavia diffusa, Lida fallax. and one patch of extremely dwarfed tufts of Eragrostis whitneyi (rel. aff.).

The beach in lagoon beach is in places extremely steep, other places very gently sloping. In the latter places the sand is of a

finish sand character. On the beach Tribulus is cast up in quantity. To the east of the filled area the lagoon beach, are flats of Fauriium, Portulacastrum, quite variable in leaf size and shape, but with the leaves generally more or less erect (and grayish green?) Away from the beach is an area of low scrub of Lida fallax (?) about 0.7-1 m. tall. Around some of the buildings Pluchea odorata is very well established, with one bush about 1 m. tall and many smaller ones, flowering.

3020	1"	Lida fallax Walp. abundant, forming low scrub		shrub 0.7 m. tall, flowers orange.
1	02	Cenchrus abundant, forming dense patches		
x	03	Tesuvium portulacastrum L. var. prostrate, leaves ~~narrower~~	green	prostrate, leaves more or less erect, very thick, glaucous green. flowers white.
4	04	Tesuvium portulacastrum abundant on saline flats near inner beach	m. green	
2	05	Tesuvium portulacastrum var. green		
3026	6"	Eragrostis whitneyi Fosb. abundant locally near inner beach		tufts stiff

1947 Canton I. (Phoenix group)

30 20 v. Boerhavia diffusa L.
common near inner beach

21 v. Portulaca lutea Sol.
common locally in hills south

09. Tribulus cistoides L.
occasional on inner beach

10. Pluchea ~~odorata (L.) Cass.~~
flourishing along inner
building margin of

11. Cleome viridis (L.) Gaert.
very common in disturbed
places

17. Cenchrus echinatus, L.
very common in disturbed
places.

17. Leptochloa uniflora (Forst.) R.Br.
common

17. Tribulus cistoides
washed up in abundance on
inner beach

not 14. Euphorbia
near around buildings

15. Triumfetta procumbens Forst.
occasional

16. Euphorbia ~~hypericifolia~~ L.
rare

Tribulus cistoides

prostrate

erect, stems 2-2.5 cm.
thick.
prostrate somewhat
ascending.
shrubby, 1-3 m. tall,
highly aromatic

PLANTS OF CANTON ISLAND
(PHOENIX GROUP)

Eragrostis whitneyi Fosb.

Det. F.R.F.

Locality around Air Base
Habitat abundant locally near inner beach
disturbed coral sand and rubble
around buildings and air field

Date Jan. 30-31, 1940 Alt. 1
Coll. F. R. Fosberg No. 30206
Remarks # white
tuft stiff

ined P.

1949 Canton I. (Phoenix Gp.)

30 20 7. Boerhavia diffusa L.
common near inner beach
21. Portulaca lutea Sol.
common locally in hills south
09. P. tuberculata
occasional near inner beach
10. Peperomia [illegible] (L.) Dietr.

11

17

12

13

14

15. Tournefortia procumbens Ford.
occasional
16. Euphorbia [illegible]
rare

ferostrata

erect, stems 1-2½ cm. thick

prostrate somewhat ascending.

shrubby, 1-2 m. tall,

PLANTS OF CANTON ISLAND
(PHOENIX GROUP)

Euphorbia

Det.

Locality around Air Base

Habitat disturbed coral sand and rubble
72 to around buildings

Date Jan. 30-31, 1949 Alt. 1-6

Coll. E. R. Leisberg No. 30214

Rev'd E. H. Walker

prostrate.

erect.

1949 Canton S. (Phoenix Bay)

32 no 1. Bourbaria diffusa A.
common near inner beach
28. Portulaca Lutea Sol.
common locally in hills and
29. Portulaca oleracea L.
occasional near inner beach
10. Plumbea [illegible] (L.) Lam.
flowering stem

1 cyt

1 leaf

1

1

yes 1

1 . . . . . ovat.
ovate-acuminate

3 16. Euphorbia [illegible]
Sclerocarpa (Hallier f.) Croizat
[illegible]

prostrate

erect, stems 2-2.5 cm. thick,
prostrate - somewhat
ascending.
shrubs 1-2 m. tall,
highly aromatic

bracts (some much
taller than specimens)

prostrate.

erect.

1949 Canton D. (Phoenix group)

30 20 7. Boerhaavia diffusa L.
common weed in river bank

28. Portulaca lutea Sol.
common locally in hilly woods

09. P. pilosa var. stellata L.
occasional on river bank

10. Phyllanthus ~~[illegible]~~ (?) Floss.
flowering throughout
building in dry (?) Quarter.

11. Chamaesyce celastroides (L.) Yuncker.
very common in disturbed
places

17. Canavalia ensiformis L.
very common in disturbed
places.

12. Leptaena ~~[illegible]~~ (Ford) R.Br.
common

11. Tribulus cistoides
washed up in abundance in
river bank

not 14 Euphorbia
near around buildings

15. Triumfetta procumbens Forst.
occasional

16. Euphorbia ~~[illegible]~~ prostrata Willd. ex Roem. & Schult.
rare

prostrate

erect stems 2-3.5 cm
thick.
prostrate somewhat
ascending.
shrubby 1-3 m. tall.
highly aromatic

branches (some much
taller than specimens)

prostrate.

erect.

1949 Fiji

Feb. 1 — flew from Nadi to Suva, over Viti Levu and Viti Levu to Suva, circled around Suva Bay, flew west to Nadi; then south, toward N. Land a short stop at Nadi.

Tavua Lava and Ovalau seem well wooded, Viti Levu especially so in section 13 low flat land well cultivated, mostly sugar cane. Some native villages even up in interior esp. on Vanua Levu, very few in dark patches on Viti Levu.

The inner plateau in Viti Levu is scarcely a plateau but mostly a confused mass of mountains very rugged and covered with dense forest, except certain cliffs and sharp peaks the latter bare of vegetation. Rivers are abundant, their lower courses usually drowned.

The coastline is incredibly indented, and a well developed barrier reef is present around most of it. On southern Viti Levu Nadi, Viti Levu

30.19" Females nondriofolia
common around building at airport

this becomes a broad fringing reef.

The windward side of Viti Levu is open, rocky, hilly, mountainous, partly covered by dense forest. Cattle trails abundant on slopes. This end was dominated by mountains and high cliffs. Sharp

[redacted]

ity, and
ion of
is evident
eleven part
are
ains.

not
the small
ith the
le-mediate.

No lithothamnion reef evident at outer edge of barriers.

[Triffid fruit mailed to Baldwin]
flowers lilac not much
exceeding involucre.

 1947 Fiji

Feb. 1 — flew from north to south over Vanua Levu and Viti Levu to Suva, circled around Suva then flew west to Nandi, then north toward N. [illegible] and [illegible] stopped Nandi.

[illegible]

[illegible]

River [illegible] lower courses mostly [illegible].
The coastline is incredibly indented, and a well developed barrier reef is present around most of it. On southern Viti Levu

Nandi, Viti Levu
30219 Emilia sonchifolia
1 common around buildings at airport

this becomes a broad fringing reef.
The western third of Viti Levu is open, rolling hilly or mountainous, probably used for [illegible] cattle paths abounding on slopes. The land was doubtless much wider, and fire has been burning a lot. In the forest adjacent to this region Albizzia moluccana or something that looks very like it is common.
The rivers in the west part are very silty, and some serious erosion at heads of ravines is evident.
In the southwestern part of this open part are scattered Casuarina trees.

The Emilia here is not identical with the small E. sonchifolia, or with the Kauai E. 4, but intermediate.

No lithothamnion reef evident at outer edge of barriers.

[Unripe fruit mailed to Baldwin]
flowers lilac not much exceeding involucre.

1949 Fiji

Feb. 1 - flew from nadi to south over Vanua Levu and Viti Levu to Suva, circled around Suva then flew west to Nandi, then south toward N. I. and a short stop at Nandi.

Vanua Levu and Ovalau seem well wooded, Viti Levu especially so in eastern 1/3. Low flat land is all cultivated, mostly sugar cane. Some native villages even up in interior, esp. on Vanua Levu, very few in deep interior on Viti Levu.

The inner plateau on Viti Levu is scarcely a plateau but mostly a confused mass of mountains, very rugged and covered with dense jungle except certain cliffs and sharp peaks. The latter have a low vegetation. Rivers are abundant, their lower courses mostly drowned.

The coastline is incredibly indented, and a well developed barrier reef is present around most of it. On southern Viti Levu

Nandi, Viti Levu

3 v 18" Emilia sonchifolia
common around building at airport

this becomes a broad fringing reef.

The western part of Viti Levu is open, rolling mountainous, probably covered by Miscanthus cattle paths abundant on slopes. The soil was doubtless much alike, and has been burned a lot. In the forests adjacent to this region, Bauhinia motuoana is something that looks very like it is common.

The rivers in the west part are very silty, and some serious erosion at heads of ravines, is evident.

In the southwestern part of this & other part are scattered casuarinas.

The Emilia here is not identical with the small E. sonchifolia, a with the Kauai "9", but intermediate.

No lithothamnion reef evident at outer edge of barriers.

[Cirsium fruit mailed to Baldwin]
flowers lilac not much exceeding involucre.

1949 New Zealand

" " ~~Feb~~ Feb. 4 - hills south of Piha

low scrub of Leptospermum scoparium, Olearia, Veronica, Gahnia, etc. on valley floor hills, near ocean.

30 219 Veronica macrocarpa Vahl
common in

3 20 Cladium complanatum Berggr.
occasional in

3' 21 Gahnia gahniaeformis Hell.
occasional in

4 22 Schoenus brevifolius R.Br.
common in

4 23 Olearia
common in

3 24 Coprosma robusta
common in

~~Dicksonia squarrosa~~
~~occasional in~~

" Feb. 4 - Piha Waitakere Range, Scenic Drive, north facing ~~slope~~ gully ~~and~~ gentle slope and floor of valley

~~Dicksonia squarrosa~~
~~occasional in~~

7' 25 Dianella intermedia
rare in bush

3 26 Pteridium esculentum
local, ~~in~~ terrestrial on
~~Manuka~~ manuka scrub

4 27 Genisotoma
one plant seen

North Island

shrub 1 m. tall

stems strongly flattened, leaf like.
caespitose

caespitose

shrub 1.2 m. tall.
leaves stiff, rays white.
shrub 1 m. tall; leaves stiff, pale beneath; fruit orange.

manuka wood. and bush on slope.
caespitose

erect

shrub 1 m. tall

1919 New Zealand

307-15 Reft to fern remains in rocks, common, & in mine

✓✓ rare - recorded 7 on 26 miles in road.

~~1 Lygodium~~

1 29 ~~30~~ 7 ~~Lygodium~~
common in waste often with

4 30 Cortella serpifolia
common (long way on edge of road bank

5 31 Lygodium
climbing on tree ferns in open edge of wood.

1 32 Lobelia anceps
rare in road side

1 34 Wahlenbergia
occasional along road at edge of wood.

4 35 Coprosma robusta
common in woods.

1 37 Olearia
rare in deep shade

~~36 Hebe speciosa~~

1 36 Asplenium Lamm
on trunk of tree fern

1 37 Schefflera
~~10~~ in woods

3 38 Coprosma
common in woods

Tree 7 m. tall,
flowers with petals
& white fragrant.

prostrate, sub-shrub,
fruit edible - reddish.

flowers pinkish

shrub 2 m. tall,
leaves, fruits & wood,
fruit in racemes
leaves purplish.

pendent

small tree, 6 m. tall.
buds green.
small tree, fruits
juicy, orange

1947 N. Z.

3	30277	Metrosideros macropleylla Alexm. in woods, in undergrowth	small tree or large shrub, fruit white purplish on one side.
"	40	Blechnum filiforme Kt. climbing on tree trunk	stipe black and footlike bends at right angles downward at ground, stem
7	41	Uncinia common in small openings	
2	42	Nertera "depressa" in shade under trees	prostrate, leaves thin, deeper green than N. setosa, fruit.
1	43	Nertera dichondraefolia in shade under trees	prostrate, dull green, stems slightly hairy.
3	44	Polypodium tamariscinum epiphytic on tree trunks	
1	45	Ranunculus lyallii grassy roadside	
✓✓		south end of Scenic Drive second growth, forest	
3	46	Coriaria common in bushy woods	arching shrub 2 m. tall, flowers bronze-green.
3	47	Aristotelia occasional in bushy woods	small tree 5 m. tall, ripe fruit black, glossy.
2	48	Podocarpus dacrydioides common	small tree 6 m. tall, fruit immature; foliage somewhat juvenile.
1	49	Podocarpus dacrydioides - in deep shade	juvenile form, leaves distichous
4	50	Pseudopanax crassifolium common	juvenile form, plant 2 m. tall
5	51	Pseudopanax lanceolatus crassifolium common	small tree, 3 m. tall, flowers green.

1947 M. J.

3025. Agathis australis
common (formerly
dominant in forest).

2 53 Asplenium lamprophyllum
in rocky shade epiphytic

1. 54 Lycopodium billardieri
epiphytic

4 55 Melicytus ramiflorus
occasional in wood

3 56 Geniostoma ligustrifolium
occurring in undergrowth

½ 57 Phyllocladus glaucus
rare

2. 58 Melicytus micranthus
rare

5 59 ~~Metrosideros~~ Metrosideros scandens
climbing on tree trunks,

2 60 Veronica salicifolia on bluff
rare in shade

" 61 Fel. " Pinea

sand dry shore (much magnetic)
with, sand dunes,
flats, and low bluffs
with grass.

2 61 Cyperus [illegible]
common on bluffs

5 62 Scirpus nodosus
common in depressions
in dunes

. 63 Convolvulus soldanella
common on dunes and
front of bluffs

~~1947~~ M. J.

tree 10 m. tall.
open crown.

pendant

pendent

small tree 5 m. tall.
white fruit [illegible]
a. cuneata. shrub, stem, fruit
minutely
small tree, stem.

shrub 1½ m. tall, flowers
greenish white

thick climbing shrub,
stamens white.
shrub 2 m. tall;
flowers white - slightly
purplish, fragrant.

caespitose.

densely caespitose.

prostrate

3 4 5 Lycopodium
on exposed cliffs

Blechnambacteria
common on

6 Hypnifex hirsutus

7 dominant on outer dunes
just above wet flat
of beach.

~~Carpobrotus~~
common on dunes

8 Calystegia soldanella
common on dunes

9 Corysanthes rotundifolia
occasional on dunes

10 Carex pumila
occasional on outer west
edge of dunes, above beach

The Waitakere Range,
lying west of Auckland,
was once wooded with
Kauri (Agathis australis) of
enormous size. This woods
has been largely cleared off,
and a broken down second-
growth forest, manuka
bush, and scrub have
replaced it. This is
moist in the ravines
but tends to be rather
dry on slopes and ridges
Never, however, too dry

forming a dense low
growth.

heavy cumuliform bush in sand.

shrub on talus

shrub on talus, head
dune white
shrub on talus.
Scaevola glauca; fruit
orange.

to support epiphytes
in abundance. Agathis
and Vitex, particularly,
are covered with
epiphytic ferns,
Astelia and Collospermum
as well as with Freycinetia
and Rhipogonum as
liana. Tree ferns
Cyathea medullaris, C.
dealbata & Dicksonia
are common and become
abundant on clearing.
Blechnum filiforme
is common on ground and
climbing in trees.

Conspicuous species in this broken-down forest are Rhopalostylis, three species of Melicytus, Dacrydium cupressoides, Vitex lucida macrifolia, Fuchsia excorticata, several Pittosporum species, Corynocarpus ~~Dys~~ obtusa, C. Pseudopanax crassifolium, Nothopanax, Olearia, Piper, Freycinetia, Leptospermum ericoides, etc.

The scrub is in places a tall scrub or low forest of Leptospermum, elsewhere above scrub of a mixture of Ulex europaeus, Nakea articulata and Pteridium aquilinum sep. esculentum, with various other subsidiary species.

The bluffs south of Piha have a low scrub of Leptospermum scoparium, Gahnia xanthocarpa, Olearia, Veronica macrocarpa, Pharmium colensoi, Gahnia gaudichaudii, Cladium compressum, Schoenus brevifolius, etc.

Carpetweed mostly Muhlenbeckia

The beach north of Piha is not at all steep, is of a peculiar blue sand, largely magnetite, has 3-4 lines of huge breakers. Just back of the beach is a sand terrace up to 40 yards wide, of low dunes, covered by zonal vegetation. The outer zone a few yards wide, is of Spinifex, with a little Carex pumila. Then is a wide belt more or less of Lupinus arboreus, formerly of Scirpus frondosus, Scirpus nodosus, Tetragonia expansa, etc. Cassinia scattered here and there.

Back of this is disturbed ground with weeds.

Then a row of low bluffs with depressions behind them. On the bluffs are Leucopogon, Pteridium, etc. In the depressions are Typha-Pharmium swamps.

H.H. Allan
% The Director of the Botany Division
D.S.I.R., 8 The Terrace.
Wellington, N.Z.

c vv Feb 5 Ft Lauderdale
Whiteleaf Range

Partially cleared hammock (cypress)
forest on slope, relatively
low except in ravines,
[illegible] with many epiphytes.

30271 Psychotria
common in second-growth
brush

1 72 Tmesipteris tannensis
epiphytic at base of tree
in hammock.

2 73 Thelypteris floridana
edge of woods

1 74 Peperomia
epiphytic in forest

1 75 Adiantum
woods on slope

2 76 Blechnum [illegible]
in deep woods on slope

3 77 Nephrolepis
in open low woods
near stream

2 78 Dryopteris [illegible]
on cut bank above road

aureatis shrub 2 m. tall,
[illegible] fruit yellow

ac mi- pellaeoid.

shrub 1 m. tall, erect.
[illegible] ultimate
fleshy, leaves fork
beneath.
shrub; fruit green

terrestrial.

shrub 3 m. tall, trunk
slightly lanyed, strongly
twisted undulate.

1909 N.Z.
[illegible] Bay.
Feb. 6. Rangitoto Island, Auckland harbor.

A [illegible] recently extinct volcano, and not [illegible] last eruption [illegible] of scoria and of lava that is [illegible] weathered. It would [illegible] that a permanent vegetation began a little [illegible] years ago, though [illegible] [illegible] would have preceded. The present vegetation is of a dwarfed character, and is [illegible] slowly attaining greater stature.

It is reasonably uniform though in the interior the trees are larger. Around the base of the cone proper are extensive flats. The commonest tree is Metrosideros [illegible] which is everywhere [illegible] occasionally with M. robusta. Myrsine is also common, Griselinia, Pittosporum, Pseudopanax, [illegible], etc. Lichens are everywhere. A few ferns and herbs are on the rocks, mostly in the spaces between the trees, which are not closely spaced.

Along the shore are Avicennia growing in sand and cliffs of [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] etc.

[illegible], a small island [illegible], across [illegible], is of different structure, consisting of horizontal sandstone bed. It has been completely denuded except [illegible] ~~[illegible]~~ Metrosideros, Coprosma[?], etc. on cliffs. These cliffs are curious, being wave cut cliffs. [illegible] cliffs face the sea and must have been cut before Rangitoto was formed, as no waves are beating there now. This island is grazed over and is used for cultivating

1949 N.Z.

Feb. 6 Islington Bay, Rangitoto Island, Auckland Harbour

low sparse forest of Metrosideros exsula on scoria substratum

30	77	Wahlenbergia on bare lava rock, in crevices	root fleshy; flowers white.
1	80	Peperomia rock crevices	fleshy
1	81	Psilotum nudum rock crevices, uncommon	a small tuft of single stems.
1	82	Asplenium rock crevices, rare.	"caking" habit
1	83	Dianella rare	fruit deep purple
3	79	Cladonia abundant on bare rock	
3	85	Styphelia acerosa common	shrub 1.3 m. tall, fruit white, depressed-globose.
3	86	Usnea subcrecens common on trees	
3	87	Cladonia (?) incrustata common on rocks	
3'	89	Dodonaea viscosa rare	small tree 3 m. tall (others seen to 7 m.)
3	89	 common on rocks	
3'	90	Solanum aviculare occasional	shrub 1.5 m. tall; ripe fruit scarlet.
3	91	Coprosma tetragona occasional	tree 5 m. tall
1'	92	Calicronia australis dominant on ~~rock~~ scoria at sea-water's edge	flowering terete, green; spikes slightly larger than stems

1949 N.Z.

30+9½ Myrsine
subdominant in front
" 94 Myrsine
subdominant in front
" 96 Metrosideros excelsa
dominant
" 97 Pittosporum tenuifolium
occasional in middle
" 98 Wahlenbergia
rare
~~99 Elaeocarpus~~
" 97 Avicennia
common in edge of salt water

" 99 Rhizophora
common above water's edge

30+10 ½
"
" 01 Knightia excelsa + small
Manoao gentlemanii and a few
silver tawhero
" 02
in disturbed area in bed of
old quarry
" 03 Metrosideros excelsa + Pittosporum
both, however are further up
the inland
" 04 Pittosporum pimeleoides
on disturbed area
" 05 Nothopanax arboreum
occasional
" 06 Nothopanax arboreum
occasional in

N.Z. 55

small tree 3 m. tall; ♂

small tree 3 m. tall ♀

tree 3 m. tall.

flowers white.

shrub 2 m. tall; flowers
dull yellowish-reddish-
white; fruit yellow;
cotyledons deep green.

leaves lanceolate-triangular

shrub 1.5 m. tall; flowers
greenish

small shrub 2 m. tall.

flowers pink.

small tree 3 m. tall,
strongly aromatic when broken;
buds purple-maroon;
producing abundant mucilage

small tree 3 m. tall, strongly
oily- aromatic when broken, fruit maroon

Feb. 7 – Visit to [illegible]

[illegible]

Feb. 8 – Visit to [illegible]

Being a [illegible] in the [illegible]

In the cave [illegible] the lights [illegible]

[illegible]

Along the river [illegible] the bottom [illegible] of the cave are [illegible] of glow-worms on the ceiling. Larvae of a tipulid. They spin a [illegible] of silk then let down [illegible] along the sides strung with globules of sticky liquid like tiny strings of glass beads. These catch the flies, [illegible] mosquitoes etc. that fly into the cave, or hatch out from its water.

Feb 8 – Visit Taupiri & Ngaruawahia

An open field, not recently grazed, is filled with a great assemblage of weeds. Interesting is a [illegible] of [illegible] varying from white to maroon with maroon white to a [illegible] margin and every possible intermediate.

Glow-worms live in and [illegible] they are apparently attracted by the luminescence, which [illegible]. The adult [illegible] apparently able to fly among the [illegible] of sticky threads without getting caught.

The [illegible] in [illegible] the cave. It comes from the river and [illegible] from inside.

The limestone here is [illegible], conspicuously stratified.

1949 N.Z.

Feb. 9 - Awamatai, 10 mi south of Te Kuiti
patch of badly grazed forest, largely Beilschmiedia and tree ferns, on steep slope many ferns.

3	20	Blechnum lanceolatum terrestrial
1	21	Botrychium occasional in woods,
2	22	Hymenophyllum flabellatum epiphytic on tree trunks
1	23	Leptopteris hymenophylloides terrestrial
4	24	Weinmannia racemosa common in woods
1	25	Polypodium common, epiphytic
3	26	Hydrocotyle local in shade
2	27	Athyrium common, terrestrial
3	28	Beilschmiedia tawa dominant tree in forest
1	29	occasional in shade

N.Z.

340 m. [illegible]

dark translucent green

small tree, 1 m. tall.

prostrate

on rocks

tree 15 m. tall, fruit immature, fl. not det.

1749 N.Z.

✓✓ Feb. 9 just above Raurimu, toward National Park Junction
thick forest with dense undergrowth.

30 330 Pteris (Rubia?)
common at edge of forest
1 31 Blechnum fluviatile
in shade
5 32 Coprosma
common
3 33 Blechnum
occasional in woods
1 34 Juncus
in wet trail
2 35 Galium aparine L.
in weedy thickets at edge of woods
1 36 Cyperus
in wet trail
2 37 Uncinia
in shade
1 38 Schefflera digitata
in undergrowth
5 39 Polyfordium
climbing on tree trunks
1[4] 40a Blechnum filiforme
in shade, rare
[illegible] Microlaena avenacea
2 111a Metrosid. excorticata
second story of forest

PLANTS OF NEW ZEALAND
FLORA OF N.Z.

Blechnum filiforme

Locality just above [illegible] to Raurimu Junction

Polium gracile

Dec. [illegible] 1949 No. 12,510
Coll. [illegible] No. 10367

Remarks rooted, clump-plant, [illegible] covered [illegible] forests, in water in front

tree 5 m. tall, spreading with rather coriaceous leaves white beneath; flowers green, yellowish tinged to brownish, turning bright red; fruit black.

1949 N.Z.

Taf. 9 just above Rauriki, toward Nelson Park Junction
thick forest with cleared undergrowth.

3 0 330 Pteris (Rubia?)
common at edge of forest
1 31 Blechnum fluviatile

2 32

3 33

1 34

2 35

rdo

1 36

2 3

1 3

5 39 Polypodium
climbing on tree trunk

1" 40a Blechnum filiforme
in shade, rare

1 41 Microlaena avenacea

2 41a Trichosia excorticata
second story of forest

N.Z.

PLANTS OF NEW ZEALAND
NORTH ISLAND

Blechnum filiforme

Locality just above Rauriki on Nelson Park Jct. Tongariro Nat. Park
Habitat rare in shade

Date Feb 7, 1949 No. 30340
Coll. F. R. Fosberg

Remarks

tree 5 m. tall, spreading, with exfoliating bark; leaves white beneath; flowers green, purple toward tip of hypanthium, turning bright red; fruit black.

62 1949 N.J.

✓✓ Taf. 7 – just above Raritan, toward National Park Junction
thick forest with dense undergrowth.

3 P 330 Pteris (Pteridium?)
2 common at edge of forest
1 3' Blechnum fluviatile

4' 3'

3

2

1

2

1

5"

1" 40a 13 Blechnum spicant
in shade, rare
4 Nicolaia arvensis
2 111a Pinckneya excorticata
second story of forest

rede

N.J. 63

Vefta stemmed off Pt. Lookout
Left off Main Entrance
Rt. for about 1/2
Went left on Main Entrance
for about 1/2 mile to Observation

PLANTS OF NEW JERSEY
WORK MAP

Blechnum spicant

Locality just above Raritan Entrance to
Park Junction
Character rare in shade
in thick woods

Date Feb 9, 1949 Alt
Coll. F. R. Fosberg No. 30340

Remarks

→

tree 5 m. tall, spreading;
usually evergreen; bark
brown with lenticels;
flowers green, purple toward
tips of hypanthium, turning
bright red; fruit black.

1949 N.S.

✓✓ Feb. 7 – forest above Rawinsonde, toward National Park Junction
thick forest with dense undergrowth.

30330 Pteris (Pteridium?)
2 common at edge of forest
1 31 Rhodomyrtus tomentosa

3 "

2 "

1

2 "

1

5

1 41 40c

1 "

2 Alstonia scholaris, excoriate
second story of forest

N.S.

Lofoscyphus [illegible] of Mt. [illegible]
[illegible] Mount [illegible]
770 m. [illegible]
[illegible]

shrub 2 m. tall;
fruit immature

" " reclassum; flowers white.

" small tufts

" shrub 1 m. tall.

tree 5 m. tall, spreading, with unfolding leaves; leaves white beneath; flowers green, purple & red. Both hypanthium, turning bright red; fruit black.

1949 N.Z.

✓✓ Fol. 7 – just above Rawiriwa, toward National Park Junction
thick forest with cleared undergrowth.

30 330 Pteris (Rubia?)
common at edge of forest

1 31 Blechnum flaviatile
in shade

5 32 Coprosma
common

3 33 Blechnum
occasional in wood.

1 34 Juncus
in wet trail

2 35 Galium aparine L.
in weedy thicket, at edge of woods

1 36 Cyperus
in wet trail

2 37 Uncinia
in shade

1 38 Schefflera digitata
in undergrowth

5 39 Polypodium
climbing on tree trunk.

1+ 40a Blechnum filiforme
in shade, rare

1 40c Microlaena avenacea

2 41a Trichosia excoriata
second story of forest

N.Z.

shrub 2 m. tall;
fruit immature

occasional; flowers white.

small tuft

shrub 1 m. tall.

tree 5 m. tall, spreading, bark exfoliating freely; leaves white beneath; flowers green, purple toward tips of hypanthium, turning bright red; fruit black.

1949 N.Z.

Feb. 9 vicinity of "Chateau" Tongariro National Park
- open tussocky grassland

3' 3½" Wahlenbergia albomarginata
- common

4" Epilasia cunata
- common

Feb. 9 The Chateau
Tongariro National Park

Nothofagus forest and
Tussock grassland

½" Elaeocarpus hookeri Native
- bad of forest

¼" Phyllocladus alpina
common along edge of forest

1' 4" Dracophyllum
common in zone between
grassland and forest.

.46 Pagenosphora petiolata
common in deep shade.

.47 Nothopanax sinclairii
common at edge of forest

.49 Nothopanax sinclairii
common at edge of forest

.49½ Myrsine divaricata
common in undergrowth

.50 Gleichenia cunninghamii
common locally at edge of forest

.51 Quintinia serrata
common in woods

.52 Nothofagus cliffortioides
dominant tree

1101 m. (Kodak roll of Ngauruhoe Vol.)
1051 m.)

flowers white-stained
- pink
flowers white - not
perceptibly altered
in 24 hrs. fresh

1100 m. Plastic cubic foot of
Ngauruhoe Rhyolite

Native
- forms of juvenile leaves

shrub 2.5 m. tall

shrub, up to 1 m. tall
- leaves entire.

- very velvety.

- small tree, with oily-
aromatic odor when
broken.

tangled shrub 1 m. tall

shrub 2 m. tall;
- fruit green
tree 5 m. tall, branchlets
& leaves apparently glabrous.

1949 N.Z.

70	353	Achillea millefolium L	
1		rare in eroded places	
4	54	Gleichenia circinnata	
		~~common~~ abundant locally in grassland	
1	55	Coprosma foetidissima	
		occasional in forest.	
1	56	Polypodium billardieri	
		epiphytic, common	
4	57	Gaultheria antipoda	
		on at edge of forest	
3'	58	Pittosporum tenuifolium	
		rare in forest	
3'	59	Coprosma lanceolata	
		common in forest	
7	60	Halocharis muscoides	
		common locally near	
		edge of forest in grassland	
3.3	61	Elytranthe tetrapetala	
		parasite on Nothofagus	
3"	62	Diacrophyllum filiforme	
		common in grassland near	
		edge of forest	
3	63		
		epiphytic in ~~forest~~ Nothofagus trunks in	
		forest	

Here are thick Nothofagus forest and the scrub grassland side by side, with no apparent difference in topography, soil etc. The Nothofagus looks like a conifer from a distance

N.Z.

	one plant with pink, one with white rays.
	dwarf shrub; fruit white.
	spreading tree 6 m. tall, fruit immature
	shrub 2 m. tall; fruit immature.
	stigma green, ovary black, purple
	flower scarlet, petals very easily caducous.
	shrub 0.6 m. tall

M. 7 - 1949

Feb 10 - ~~700~~ slopes of Mt. Ruapehu back of the Chateau Tongariro National Park. 3700 - 6500 ft.

Vegetation changes as one goes up the mountain from Nothofagus forest with Nothofagus, Cordyline ~~banksia~~ indivisa, etc. sharply to an ericoid scrub of various genera, such as Podocarpus, Dracophyllum, Veronica Olearia, Dracophyllum, Coprosma, etc. Then suddenly again at about 4500' to a sparse, low, dwarfed alpine-

— extreme dryness in dry spell, and possibly an explosive eruption that took place 1 month ago.

— forest at about 4900'

30 = 64 Nothopanax
4 abundant, variable
3 66 Aristotelia
rare
3' 66 Nothopanax simplex
common

at about 4000' Tussock Zone (Chionochloa sp.)

1200 m

M. 9 Kodachrome roll #3

vegetation of only a few species, some the same as before but much dwarfed. Leucopogon rapidly above 4000. At 4000' and above only Helichrysum, veronica sp., Dracophyllum sp., Gaultheria depressa, Gaultheria rupestris, Grimmia ~~sp~~ pulvinata, Coprosma pumila, Celmisia spectabilis, Ionidium aromatica, Acaena glaucophylla, Raoulia, Senecio bidwillii remain. The vegetation is very sparse with extensive areas of loose pumice + rock with nothing.

This may possibly be the result of the deep snow, the light, easily movable nature of the cinders and pumice and the abrasion possible, as well as the drainage and poverty

shrub 2.5 m. tall, silky leaves, fruits green, simple at summit.

tree 3 m. tall, fruit green.

small tree or shrub 2 m. tall

C — scrub on steep slopes and in ravines

30 30 7 Polamogeton abundant in pools in stream

7 68 Veronica plebeia common in lower woods

7 69 Cotula coronopifolia occasional

5 70 Dacrydium common

4 71 Phyllocladus alpina common, locally dominant

1 72 Epacris common locally

1 73 Dacrydium laxifolium common

4 74 Pentachondra common

2 75 Anisotoma aromatica common in moist tussocky vegetation in ravines

4 76 common in moist tussocky vegetation in ravines

1 77 [illegible] common

4 78 abundant in moist bed bottom of ravines

1 79 [illegible] common

1130 m. 4 ac. — wetter leaves floating, spikes emerged on flower, — in water in fruit.

1205 m. 4 ac. — shrub 0.6 m. tall. flowers lavender. — shrub, erect or low procumbent; — the fruit

1200 m. 2 ac. — range — mostly 2 m. — shrub 0.6 m tall erect. — fruit green

1231 m. 3 ac. — shrub 1.5 m. tall, fruit purple — weak stems

— prostrate fruit green

— low, flowers white, fruit non-crimson, thinly fleshy, inflated

— dense rainy, pumpkin-moss

shrub 1.4 m tall flowers white.

— shrub 1.3 m tall; flowers strongly scented.

1949 Vol. 3.

Sept 30 Waterfall Bay region
Low moor

0 — Alpine dwarf vegetation Below Red Peak 450 m. - 591 m.
1 21 Empetrum procumbens
common but rarely fruits
1 22 Cassiope mertensiana
common but rarely fruits
1 23 Euphrasia sp.
rocky peaty ledges

1 24 Forstera sedifolia
rocky peaty ledges
1 25 Gunnera cotensoi
rocky peaty ledges
1 26 Ribes parishianum
rocky peaty ledges
2 27 Drosera
common on rocky peaty ledges and
1 28 Drosera
rare on rocky places
2 29 Oreobolus pumilio
common on rocky peaty ledges
1 30 Schizaea fistulosa
exceedingly rare in heathy
mats on rocky ledges.
1 31 Pimelea pulvinaris
rare on rock slopes
1 32 Carpha alpina
common on rocky wet rock
3 33 Podocarpus nivalis
common on rocky places

1400 m
45 ft.

Sept 30

73

forming dense mats

flowers white.

depressed shrub; fruit green or red fleshy receptacle.

1949 N. J.

20 37 4 Draperia [illegible]
common in protected
places below 2 under rocks
7 91 Usnea galeiana Lec. & Clem.
rather rare
2 96 Ramalina Evernioides
common on rocky ledges
1 97
exceedingly rare on rocky
ledges in cleft of rock in part
1 98 Cetraria pinastri
Common in rocky places
4 99 Parmelia physodes
common in rocky places
30 100 Parmelia subaurifera
common
3 01 Parmelia aspidota
common
3 02 Parmelia [illegible]
occasional
1 03 Parmelia [illegible]
occasional
1 04 Dendrina colensoi
common
7 05 Heterodermia [illegible]
very common

0 — entering alpine zone of
vegetation around the Lake Head
4 06 Dactylina colensoi
very common
3 07 Pseudocyphellaria [illegible]
very common

N. J. 75

Alectoria fremontii

Alectoria

Parmelia physodes

Parmelia subaurifera

Parmelia aspidota

Parmelia [illegible]

Parmelia [illegible]

Dendrina colensoi

Heterodermia [illegible]

Dactylina colensoi

Pseudocyphellaria [illegible]

and above 1300' - 1400' 1900m. - 2000m.

Lepraria

Lepraria

1949 N.Z.

Feb. 11 - The Chateau, Tongariro National Park
Tussock grassland
16 Aciphylla intermedia

Eruption of Ngauruhoe Volcano - started Feb. 7. When observed on afternoon of Feb. 9 a column of smoke was many (20 - 30 ?) thousands of feet from crater. Explosions were almost continuous resulting in steady rumbling and thundering, with great

Feb. 11 - Tongariro National Park

Tussock grassland

Aciphylla intermedia

Eruption of Ngauruhoe Volcano - started Feb. 7.

Observed on afternoon of Feb. 9

Explosions

rumbling

Most plants seen connected to Feb.

A change of wind direction at night by morning had enveloped camp (periodically) in gases which drove that direction. Next day was cloudy but the rumbling continued, becoming more pronounced and steady

toward evening. After dark the clouds cleared away giving a magnificent display of explosions, showers of red hot rocks [illegible] rolling down to the base of the cone.

[illegible]

The whole area traversed in the vicinity of the Tongariro and [illegible] basin consists of fragmental pumice sheathed by a thin layer of finer material which is beginning to be altered to soil. The soil layers are only a few inches thick in most places.

The pumice is gray or white, probably andesitic or rhyolitic in nature.

Feb 17 Gaultheria depressa
occasional under Cordia
" 19 Gaultheria depressa
occasional under bushes
" 19 Pimelea [illegible]
common in open ground
" 20 Leptospermum scoparium
dominant shrub

" 21 Lagenophora [illegible]
occasional in open ground
" 22 Linum catharticum
common

" Feb 11 - Mouth of Waitahanui
stream, east side of Lake
Taupo
~~round~~ sides dominated by
" 23 Azolla rubra
forming surface of ground
just back of lake shore

fruits crimson, calyx flesh.
fruits white, calyx fleshy.
[illegible] fruits white
fruit white, fleshy.
[illegible] very erect
[illegible] 1-2 m. tall, flowers
pinkish & white
heads white
flowers white erect

bracteoles - all 4 round

Leptospermum
shrub 2 m. common, erect

1947 W. J.

Feb. 1 - Waipahihi Stream, Taupo
Trig. 1 Triglochin striata var filifolia Buch.
abundant on wet travertine terraces, warm water
1 25 Lemna minor L.
common on warm wet surfaces of travertine terraces
" 26 Limpets to 3/4"
common in warm marsh

Feb. 12
1 27 Hormidium
just above water on edge of hot water channel
3 28 Hormidium
on travertine terraces around hot water vents

Feb. 11 - Huka Falls, Waikato River, 4 mi. N. of Taupo
on rock terraces around falls
2' 29 [illegible]
common around wet places
3" 30 Wahlenbergia
local on dry terrace
1 31" Lemna marginata Willd.
rare on dry ledges
3" 32 Mimulus rhodotus
common in wet places

springs up to 150° F
Robinia pseudo-acacia well-established on walltop, native.

leaves subterete, fleshy, flowers green, stamens yellow

stems terete

dark green, thin.

forming a rubbery thick coating on rocks

The river here pushes through a narrow inclined natural flume above the falls.

erect, flowers yellow.

flowers pale lavender

flowers pale blue

tangled succulent stemmed herb up to 1 m. tall supported on other plants.

1949 N.Z.

Feb. 11 - Geyser Valley,
Waiotapu Stream, 3 miles
north of Tarata
Deep narrow valley,
clay walls from which
steam issues through
abundant fissures,
with geysers, mud pots,
and boiling mud pots.
(6437) Dicranella integra - medium
common generally

34 Hysteropteris incana
forming tangles around
geysers and steam vents

35 Asplenium cordifolium
common around warm
water and steam vents
on muddy banks

36 Myrsine
common in thickets

37 Gleichenia linearis
common

38 Leptospermum ericoides
common on muddy banks
around steam vents

Feb. 12 Rotorua to Hakarimata
near Rotorua

(6438) Metrosideros tomentosa
occasional
Weinmannia - Leptospermum
forest

flowers pale gray-blue,
fruits gray-blue
at most 8 carpels
apex of leaves pointed,
only hyperangeous always
ciliate-mostly rolling
towards crest, no
tubers seen.

small tree 3-4 m. tall
leaves strongly undulate
not seen elsewhere much
larger than these specimens

tree 15 m. tall.

N.Z. 1949

3 30 41 Drimys axillaris
rare in forest

1 41 Collospermum
occasional epiphytic

2 42 Carina antimmodes
epiphytic

1 43 Polyblechnum [illegible]
epiphytic

4 44 Hedera sanguinea var.
common, rather, about
lower edges of forest along road

2 45 Griselinia [illegible]
occasional in bush on
cut banks above road

2 46 Gaultheria antipoda
common on [illegible] banks
above road (with 30441)

1 47 Gaultheria antipoda
common on [illegible] banks
above road (with 30446)

48 Periostema
common on lower part
of forest

N.Z.

seedling 1 m. tall,
leaves white beneath.
leaves dichotomous (but
rarely duplicated on
one side); fruit green
in bud only.

fronds fleshy

prostrate, fruiting
peduncle erect.

flowers of two colors,
green & deep purple within.

fruit white to red (30447) To
almost black

fruit deep red (with
= 30446 which is white)

shrub, fruits green.

1944 Dr. J.

2044

1

2 5 Helotium aeruginascens
Nyman in part, on
decorticated logs

3 5 on dead articles

4 5 Hyaloscypha bicolor
(Berk. & Br.) Phill.

5 5½ Lophirema anastomans
(Cke.) Sacc.

6 5½ Trichomaster (Aff. aureum
abundant on petioles of
living leaves of Pteris

7 5½ Rhizogenium recumbens
(Mitt.) Jaeg.

8 5½ Hymenoglyphum denudatum
(Lév.) Sacc. in part (Flora
Lindau pro hyphosporo)

9 5½ Pirodon pezizoideum (Jungh.)
Corner terrestrial, on soil

10 5½ Helotium (Hyalinia)
very rare on bottom of rotten
log

11 5½ Polyporus (Leptoporus)
arcularius (Batsch) Fr.

12 6 Trichomaster aureus (Mont.)
Sacc. & Syd. f. stipitatus

N. O.

Helotium gracile
Rehm

Hyaloscypha bicolor (Berk. & Br.) Phill.
(Berk. & Curt.) Boud. f. minor
Graddon, Trans. Brit. Mycol. Soc. 39: 1956.

Lophirema anastomans (Cke.) Sacc.
Fungi Ital. 1881.

Trichomaster (Aff. aureum) abundant on petioles of living leaves of Pteris (Aff. aureum) Sacc. & Syd. Syll. Fung. 16: 1902.

Rhizogenium recumbens (Mitt.) Jaeg.
Ber. St. Gall. Naturw. Ges. 1876-77: 1878.

Hymenoglyphum denudatum (Lév.) Sacc. in part (Flora Lindau pro hyphosporo)

Pirodon pezizoideum (Jungh.) Corner terrestrial, on soil

Helotium (Hyalinia) very rare on bottom of rotten log

Polyporus (Leptoporus) arcularius (Batsch) Fr.

1949 N. Z.

Feb. 15 - plateau at east
end of lake Hauroko
east of Lake Jacobs
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]

7040 Halorrhagis
in open places
62. Acaena
in open places
63. Epilobium
common in open places
64 Geranium
common in open places
65.
occasional
67. Dracophyllum subulatum
dominant shrub
68. Pelerantbus biflorus
occasional in open places
69. Raoulia
common in open places
70 Vittadenia australis.

Feb. 17 - Jellicoe Point, southeast
shore of Lake Te Anau
71 Leptospermum tetrapatum
common in forest slightly
above Lake
72 Muehlenbeckia australis
on bushes along roadside

Hoheria angustifolia
covered in flowers

Rubus [illegible] Poll.

prostrate

(semi-erect, 2 ft.)

flowers white or pink

flowers pinkish - white

cushion

erect shrub 3 m. tall
flowers white (several in collection)
forming cushions

forming flat cushions.

very small spreading
(Rhodochiton Poll?)
extensive vine.
flowers greenish.

1949 N.Z.

Feb. 13 - 4½ mi. S. of Waikare
Inl. Tongariro National Park
S. end of Rangipo
open tussock grassland

Cassinia
occasional

Olearia
locally common.

Feb. 13 - Waiouru, 3 mi.
S. E. of Rangipo
Muehlenbeckia sp.
common along road cut

Wellington Water Reserve.

Feb. 14 - Ohongorongo Valley
across the Hutt from Wellington
A longitudinal valley in
the Rimutaka Range, reached
via a mile tunnel through
which the water main flows.
(In fact sides of this valley
are extremely different.
The valley is the result of
a fault line in the underlying
"gray wackes", a hard
fine-grained compact
gray sandstone or shale.
The west side is much
shattered by the fault
and is characterized by
continual slipping and
landslides. The east side

Podocarpus Ball's
Rangipo + grassland

rounded shrubs
c. 6 m. tall, heads entire,
caespitose

prong tools, flowers
female grandiv. fruit
green, fruiting calyx
white, very fleshy.

shows little evidence
of fire, and is not on a
bluff. The west side
is largely Nothofagus
menziesii forest, while
the east side is rimu
(Dacrydium cupressinum)-
rata (Metrosideros robusta)
forest. Both have an
understory of Weinmannia
racemosa about 30 feet high, another
about 10 - 15 feet of Dracophyllum
arboreum (also a
ground cover of Blechnum
discolor (said by local
foresters to impede seedling
growth), and at least
on the east side a lower

30476. [illegible]
3v occasional [illegible] stemmed

1 ✓ 77 Rhodon [illegible]
rare [illegible] stemmed

1 ✓ 78 Blechnum [illegible]
do [illegible] stemmed

1 79v Woodsia [illegible]
on rocks [illegible]

4 1 80 Blechnum [illegible]
almost a pure stand in
the forest on [illegible]

4 1 81 Blechnum [illegible]
on wet steep slopes in
beech forest

3 1 82 Hyperchaeta
along trail in [illegible]

5 1 83 Gymnocarpium
on wet rocks, [illegible]

Pan [illegible]
Polypodium
Polypodium
Cystopteris

along [illegible] stream Fuchsia
excorticata on the most
abundant tree, through
with Weinmannia Dysoxylum,
Melicytus ramiflorus, Pennantia,
Ixerba brexioides and occasional
Podocarpus spicatus, P.
ferruginoides, Dacrydium and
Prumnopitys taxifolia. Emergent
[illegible] Podocarpus
Totara and Dacrydium
Cupressinum. Undergrowth
small [illegible]
trunked shrubs and tree
ferns, [illegible]
most [illegible] herbs, [illegible]

fruit immature

fronds according to
annual [illegible]

Plants very dark green,
sterile fronds pinnatifid,
fertile erect
sufficiently hard, [illegible]
flowers yellow.

1949 New Zealand

1919 N. J.

70477 Rubus canadensis
41 small shrubby in swamps

30501 Pseudopanax crassifolia
510 occasional in shrubberies in
- damp bottom

Feb. 15 - Kaiwaka Point, bed
above Hyperfield
limestone
open grassland, heavily
drained, on flood plain of
river, with scattered
shrubs of Dicranopteris.
30501 Dicranopteris flexuosa
4 common shrub.
7 02 Coprosma propinqua
occasional

2 03 Muehlenbeckia complexa
Coprosma, Dicranopteris shrubs
1 04 Hymenanthera
rare, on rock piles in shrubs
1 05 Calystegia
occasionally in thick
grass in wet place
+ 06 Juncus
common in low wet places
7 07 Eleocharis acuta
common in low wet places
2 08 Carex
occasional colonies in wet places

Dicranopteris flexuosa
often forms large tangles,
shrubs 2 m.
small trees up to 10 m. tall,
frond common to

rigid shrub 2 m.
tall.
much branched rigid
shrub 2 m. tall; fruit
turning blue
when ripe; bell-green.

prostrate; fruit green

rays white

forming dense colonies
of several square meters

5007 Acaena microphylla
common

I common in Dracophyllum belt

Feb Porter's Pass Hill Tarahaua range
steep slopes with Dracophyllum
scrub, Arundo grandiflora
and Acaena microphylla

1 11 Dracophyllum
rare

3 12 Celmisia bellidioides
common on lower slopes in scrub

3 13 Coelogyne cunninghamii
lower slopes in scrub, occasional

2 14 Ranunculus
occasional on lower slopes in scrub

3' 15 Dracophyllum
common dominant in scrub
on lower slopes

3 17 Veronica
in scrub on lower slopes

3' 16 Dracophyllum
common in scrub on lower slopes

1 18 Gentiana
rare in scrub on lower slopes

1' 19 Lingula
occasional on lower slopes

3' 20 Acaena
occasional on lower slopes

1 21 Cotula
occasional on higher lower slopes

1 22 Epilobium
common on higher lower slopes

prostrate undershrub on

[illegible] on [illegible] of [illegible]
[illegible] [illegible]
rare — [illegible] [illegible]
prostrate flowers
white
rare — [illegible]

shrub 10 m. tall, flowers
greenish
[illegible] and, flowers
white

[illegible], flowers
[illegible]
[illegible]
flowers white

[illegible]

dark black plant flowers

Rare; flowers pale pink

1959 N.Y.

30 [illegible]

2 [illegible]
on bright [illegible]

1 [illegible]
[illegible]

2 [illegible]
[illegible]

28 Erigeron
[illegible]

1 29 Solidago
occasional in [illegible]
grassy [illegible]

1 30 [illegible]
occasional [illegible]
[illegible]

2 31 Poa [illegible]
common [illegible]

1 32 [illegible]
common [illegible]

33 Ranunculus [illegible]
[illegible]

1 34 Dryopteris filix-mas
rare [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

1949 N.Y.

1949 N.Z.

Feb. 17 – first east of south end of Lake Coleridge Canterbury
base of talus slope with sparse thin sward of dense bushes of Rubus, Discaria, Coprosma, Hymenanthera etc.

30 5 1 9 Coprosma rigida occasional.

Feb. 17 – half-way between Lake Coleridge and Lake Lyndon, Canterbury
Dracophyllum scrub on slopes

2 50 Senecio bidgoppus common in open spaces between shrubs

1 51 Lycopodium fastigiata common in open spaces between shrubs.

3 52 Blechnis penna-marina common, covering ground between shrubs

Feb. 19 Lake Lyndon below Mt Torlesse Range, Canterbury
Thin turf, submerged at high water

1 57 Myriophyllum elatinoides submerged

shrub 2 m. tall, branching, fruits geometrically 3-dimensional, fruits green.

caps and disk yellow

spike erect long-pedunculate

flowers white; fruit [illegible]

1949 N.J.

98554 Lilaeopsis
edge of Typha
5 Limosella
edge of water

Feb. 19 - Cores,
8 mi. s. of Bealey containing
extensive Typha marsh
and Telorean meadow
along stream.

56 Helonias formerly
Veratrum

57 Typha angustifolia
abundant

Feb. 20 - Arthurs Pass
From the village to the
[illegible] ascent is a
gentle inclined plain
with a rushing stream.
Front of moth ragus cliffs and
rocky bloomed vegetation,
[illegible] with some rock pools

58 Hydrophyllum fallax
on damp rock in forest,
[illegible] stems erect.

59 Calochortus
edge of small [illegible] wood

of 9.

flowers white

flowers lavender

[illegible] culms red.

including mesophytic
species Ranunculus
[illegible] Typha, [illegible]
in the Helonias along the edges
of the streams
occasional, especially
the ground is often
adult - mice & rats,
bogs. The weeds are
Alsine, Cerastium, Polygonum,
etc. The bogs are
dominated by Donatia,
but with many other species
Epilobium, Stellaria, Ranunculus
others present

1944 N. T.

9 Sept 1 Rosa [illegible]
[illegible]
7 61 Rosa virginiana
occasional in woods
5 62 Elaeagnus angustifolia
occasional in waste ground
1 63 Lonicera
along road at summit
1 64 Cornus macrophylla
edge of wood
1 65 Physocarpus
[illegible]
2 66 Crataegus
[illegible]
3 67 Prunus [illegible]
occasional in woods, thickets

7 68 Acer saccharum
common in woods and
round edges of forest
2 69 Physocladus aphyllus
common in woods and
at edge of forest
1 70 Parthenocissus
occasional in rocky places
and ravines
1 71 Decaisnea
in woods
2 72 Celastrus scandens
in hedges
4 73 Hoheria [illegible]
common at edges of forest
2 74 Aralia [illegible]
occasional in ravines, thickets and woods

9 Sept

flowers yellow

Rosa rubiginosa, Viburnum
fruit conspicuous
hedges, thickets, roadsides
[illegible]
cultivated

edges of woods

dense flat cushions

[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

flowers white

fruit red, fruit red

[illegible]

shrub 2 m. tall, pinnate
leaves, very offensive
flowers white, fragrant
leaves glaucous beneath

B. 1911 D. 3.

f. 9.

Feb. 27 - Common near
about Cowaray, where
wood reached every
branch was cut in winter
[illegible]

11 Pentapetes
common in certain [illegible]

11
common in vertical [illegible]

12 Lirium
on the grassy talus slopes

15 Villadelvia
on steep talus

14 Cassinia
common in rocks and talus

small branched shrub
leaves leathery
small shrub, trees
and shrubs planted
beneath.
flowers white, some
[illegible]
many white
small shrub

1947 T. T.

Feb. 24 - Nelson
Cultivated in botanic gardens

706 5 Myoporum laetum

16 Myoporum
(Not dated - received
from Australia)
17 Arbutus
18 Escallonia rubra
19 Olearia

Feb. 24 - [illegible]

Leptos. dense, prostrate variant

2 20. Sutherlandia frutescens Sutherlandia
annual shrub
3 21. Podocarpus
alluvial terrace
2 22. Olearia avicenniifolia
vertical cliff of shale
4 23. Hedaroa Pittosporum undulatum
vertical cliff of shale
4 24. Xanthoxylum Zanthoxylum Scandens Sant-
alluvial terrace
2 25. Myrtus obcordata Ugni molinae
alluvial terrace
1 26. Hebe rigidula
alluvial terrace
4 27. Xanthoxylum Podocarpus saligna Xanthoxylum
alluvial terrace
3 28. Eupatorium
alluvial terrace
1 29. Gallium Galium
rubble bank

tree 5 m. tall. Leaves with
conspicuous translucent
glands, fruit immature
at present, 7 m. tall,
fruit flesh, bright &
brilliant purple
4 - 5 m. tall at base
at least 3½ m. tall, trunk
slender 1½ m. tall, flowers
not noted.

small tree 4 m. tall, rounded outline

annual spreading tree 4 m. tall

ragged shrub with whole margined
shrub

spreading tree 10 m. tall spreading
leaves pale greenish beneath
slender shrubby tree 3 m.

tree 7 m. tall

tree 8 m. tall

rigidly branching shrub with twig-tipped
triangular leaves
granite, Mineral.

3600 Griselinia littoralis
Ivy valley
2 31 Pennantia Corymbosa
rocky wall of ravine
3 32 Griselinia lucida
rocky wall of ravine
3 33 Elaeocarpus hookerianus
rocky wall of ravine
1 34 Podocarpus spicatus
alluvial terrace
2 35 Coprosma
rocky wall of ravine
1 36 Pittosporum Tenuifolium
edge of escarpment
2 37 Pseudopanax crassifolium
steep wall of ravine
38 Pittosporum eugenioides
steep wall of ravine
3 39 Podocarpus Totara
alluvial terrace
40

shrubby tree singled or few flowers
pale greenish
tree twining through bushes
shrub under 1m tall. fruit red
small shrub with red berries
small rounded tree 12m
small shrubby tree 6m tall leaves
slightly notched appearance fruits
hardly yellow.
flowers white with pink ovary
dense rounded tree: fruit reddish black
small tree
tree about 12m tall pointed leaf, glossy

 1949 [illegible]

Feb 23 [illegible] of [illegible] Peak
[illegible] Pass on [illegible]
Sparse Leptospermum scrub on steep slopes of serpentine rocks, [illegible] of [illegible] talus.

1 30640 Luzula
in rock crevices
1 41 Raoulia
on fine broken rock
7 42 Calandrinia (?)
fine wet broken rock on trail
3 43.
fine wet broken rock on trail
1 44 Dracophyllum Bidwillii
occasional on slopes
3 45 Festuca ~~novo-zelandia~~ (?) novae-zealandiae
& along trail
4 46 ~~Wahlenbergia~~ Wahlenbergia
on broken rock in shade of Leptospermum
3 47 Cassinia fulvida
common component of scrub
1 48 Pimelea ~~[illegible]~~ Colensoi

1 49 Thelymitra
broken rock in shade of Leptospermum
4 50 Metrosideros
occasional component of scrub
8 51 Olearia T?? [illegible]
common in scrub,
4 52 Myosotis
loose talus
1 53 Calandrinia (?)
loose talus
2 54 ~~Aciphylla~~ filifolia Anisotome
loose talus

Nothopanax arboreum, N. anomalum, Corokia Cotoneaster, Leucopogon fasciculatus, Dracophyllum longifolium, Cuttonia chathamica Hebe angustifolia, H. salicifolia var Atkinsonii Hebe hybrids Coprosma parviflora, [illegible] paniculata

Vegetation of Magnesian Belt. Pp. 193+194

Olearia serpentina. Leptospermum scoparium
Poa sp related to P. aciculariifolia, Festuca like
F. novae-zelandiae, Pimelea suteri, Myosotis monroi,
unnamed Hebe, Cassinia albida var serpentina,
Blechnum procerum, Pteridium esculentum
Lycopodium varium, Poa Colensoi, Cordyline Banksii,
Libertia ixioides, Polystichum of lobifolia group,
Clematis marata, Weinmannia racemosa,
Phelicope simplex, Aristotelia fruticosa, Pimelea
linifolia, Leptospermum ericoides, Kelleria
erecta, Pseudopanax crassifolium var unifoliolatum
Nothopanax arboreum, Ne. anomalum, Corokia
cotoneaster, Lepidosperma fasciculatus, Dracophyllum longifolium, Suttonia chathamica
Hebe angustifolia, H. salicifolia var Atkinsonii
Hebe hybrids, Coprosma parviflora, Olearia
paniculata

1-7 & E

Sub 29 Mixed Scrub of Hebe Hall, Olea Cunninghamii Tree on Knoll
Ligustrum Cyclophyllum scrub on steep slope of Serpentine rock, on S.E. of Knoll Lowland Tadpoles.

1	30&40	Coprosma	small bush
		in rock crevices	
1	41	Luzuriaga	lovely creepiers
		on fine broken rock	
3	42	Calandrinia (?)	
		fine wet broken rock on trail	
3	43.		
		fine wet broken rock on trail	
1	44	Raoulia Lindsayi	small conical tuft 4 in × 5 in Cattle
		occasional on slopes	
3	45	Festuca novae-zelandiae (?) novae-zealandiae	Cattle
		& clump bent	
4	46	Wahlenbergia Wahlenbergia	flower pale blue - lavender with darker lines on mid-ribs of the lobes.
		on broken rock in shade of Ligustrum	
3	47	Leucopogon fasciculata	densely branched shrubs 4 dm. tall
		common component of scrub	flowers white
1	48	Olearia Colensoi	
1	49	Helichrysum	roots tuberous, translucent, white
		Broken rock in shade of Ligustrum	
4	50	Melicytus	shrub 2 m tall leaves yellow green, petals
		occasional component of scrub	& stamens creamy
3	51	Olearia (?)	shrub 1 m tall rays white.
		common in scrub, .	
3	52	Myrsine	plant dark purplish green.
		loose Talus	
1	53	Calandrinia (?)	leaves reddish spatulate not very fleshy
		loose Talus	
2	54	Anisotome filifolia Anisotome	
		loose Talus	

1909 II 6

1 306 ♀ 5 Lycaste
Loma Tolua

2 66 Odontoglossum
Loma Tolua

3 67 Agyrogyrum
Loma Tolua

1 68 Stenia
rocky ravines

2 69 Maxillaria Anisotome
Loma Tolua

2 60 Stenia
rocky ravines

1 61 Pleurothallis
Tolua

3 62 Stenophyllum
common on rocky slopes

2 63 Stenophyllum
rocky slopes

2 64 Veronica
rocky slopes

65 Stenia in Bud
rocky slopes

1 66 Pleurothallis Colensoi
common on rocky slopes

3 67 Stenophyllum
rocky slopes

2 68 Stenophyllum
rocky slopes

3 69 Pleurothallis
rocky slopes

(7) 70 Erocarpus Lechleri Hook.
Broken rock & clefts of bank

3 71 Stenophyllum
in creek on rocky slope

Epid

rosettes + pseds purplish green

caespitose

flowers yellow

Stem reddish green, fleshy with imbricated sheaths

densely caespitose

3 cm

densely caespitose knee high, stiff, finely pendent rounded tufts
3 cm tall

Shoots 1 cm tall - leaves many close flexible

shoots 1 cm tall - leaves many stiff

Low densely branched clumps 10 cm high

slender thickly jointed shoots 1 cm tall leaves rounded stiff

[illegible] 1972 [illegible]

[illegible] Tilia [illegible] sp. sleeper of wooded [illegible]
[illegible] Pteridium [illegible] common [illegible]
[illegible] and floor at [illegible] mixed [illegible]
and Polystichum. Little
[illegible] and [illegible]
W672 Coprosma foetidissima
4 abundant, [illegible]
along trail

4 73 Gaultheria antipoda
in [illegible] growth

3 74 Nertera
on [illegible] in [illegible] shaded
1 75 Nertera
on and beside trail in woods, [illegible]
+ 76 Drimys colorata
very local, in undergrowth

1 77 Lycopodium
common along trail in woods

78

c Feb-03 - Nelson Reservoir,
Nelson
2 79 Elaeocarpus
in mixed growth woods

[illegible] same as 1971 -

1 79 Nothofagus cliffortioides.
[illegible] in woods etc
1 79 Nothofagus truncata
common in tree

[illegible]

slender shrub 2 m, tall
ripe fruit orange; plant
with a nauseous odor when
broken
shrub 2 m. tall
fruit green, calyx not
at all fleshy
prostrate, dark green,
flowers yellow-white green.
prostrate pale green.

stout shrub 1 m. tall
leaves glaucous beneath,
shotted with purple above.
prostrate, extensive

large spreading tree,
fruit green

leaves white beneath.

[illegible]

Beech - Weinmannia forest along Dun Mt. ridge - little or no undergrowth in well developed areas. In places Weinmannia occurs in form almost pure stand, e.g. along lower parts of trail. In no place seen was it absent.

Among the Dracophyllum and Phyllocladus are a number of species of shrubs, many of which, except those that are found in the scrub, etc. (i.e. that are not flowering in garden) are shrubs,

In relatively few places were there significant admixtures of other trees, such as Prumnopitys excorticata, Aristotelia serrata, etc. Here and there Weinmannia were common on the ground. Along the trail only was there much variety in the flora.

On the serpentine slopes the change from forest to scrub was rather abrupt as serpentine was reached. The scrub near the edge was tall, with Lepto spermum, Nothofagus, Phormium, Podocarpus, Dacrydium, Cassinia, several Veronicas, etc. The species, such as Nothofagus & Weinmannia that penetrate from the forest become much dwarfed.

Toward the middle of the serpentine the vegetation become much lower, sparser, and poorer in species. This may be due to more extreme exposure, as well as looser talus, and serpentine influence. Possibly all three + other factors are involved.

N.Z. 1967

Nov 26th Tuesday

Near Station Creek 10 m. W of Greendale, Canterbury.

200 ft. Roadside Riddet scrub Hutton 17

5 82. Senecio Sheltonii

3 86. Cyperaceae
cream & Reddish

3 87. Schoenus digitatus

1/2 88. Hebe sp.

1 89. Olearia colensoi
rare

3 90.
common in shade

" Irongahua - Butler Gorge
26th February

2. 3069/1. Senecio hectorii
roadside Riddets at base of cliff

" 26th February
Hawke's Crag - Nr W of Irongahua, Butler Gorge.
roadside Riddets near bottom of gorge

4 3069/2. Cyperaceae

3 1 92. Hebe sp.
in wet rocks & banks

142 —

shrub 3 m tall

shrub 1½ m tall, brown & grey

rat's nest shrub 2m tall all aromatic
when broken; fruits in numbers
small tree, leaves pale & conspicuously
reticulate beneath. Flowers white scented
fragrant.

slender shrub 2 m tall, young leaves glaucous
beneath marked with purple young leaves
leaves bronze purple

75 m.

shrub 3m Tall twigs white, dia yellow

30 m. slender erect shrub 2 m tall, fruit
in numbers

prostrate spreading leaves with fruits bright
orange red, translucent grey

Weinmannia

Sabiifolia ~~Hook~~ Cunn.

2 40 - 5 years in seedbed

2 41 Exposed in seedbed

---

small but complete branch

shoot leaved and about 1 m tall just emerging

about 1.5 m tall, type plant but branches mostly emerging

NR 1949

17th February

Just south of Big Water River

Somber South of Lakeport

Entrance open flat peat bog, peat about 2 to 4 ft thick underlain by decomposed coarse granite, in which appears to be a river terrace.

1 3067 Bleckum processum
not Banks

2 ~~3~~ 97 Lil

common a part of bog

1 99 Sarbus
an unfree of peat in bog

1 30700 Calamagrostis
occasional in peat

2 01 Lycopodium
clavatum in peat

02
occasional in wet peat

3 02
occasional in very wet places

4 Un Sarbus
west vertical road cut

1 03 Sphagnum fuscum Schizaea
in peaty vertical bank

3 06 Sphagnum recurvum
dominant in wet parts of bog

3 01 Hypnum
occasional

1 01 Juncus
rare, at edge of bog

Dry season for visit so that the bog conditions may result from decomposition of feldspar in the granite and it deposition as a clay layer. The coarse gravity screened material flexible in locality dominant

1 ——— among fern & young growth copper red

prostrate, pale green

sage white

prostrate, open erect

prostrate, leaves fleshy

spong small hummocks

prostrate. leaves rather firm, berries translucent orange-red

reed, flowers white, leaves reddish green

plant reddish

N 2 (pt)

21st February

1 (C) 9 Melaleuca
common on peat

3 10 Acacia sabinaeana
at edge of bog

V V 22nd February
Punchbowl Reserve (Parish Rocks) just
north of small headwater creek, south
of Wilson
Recorded effect of bird dispersal
30 11 limestone wet by salt spray; Pteridium
bracken, stag-mark in most places, bush
foot, low mixed forest mat

2 "
occasional on top of cliffs

4 12 Apium insulare
top of cliffs

3 4 13 Senecio vagus
locally very abundant on tops of cliffs

3 14 Selliera radicans Cav.
locally abundant on tops of cliff

4 15 Lobelia
round tops of cliffs on shaded places

2 16 Sarcocornia
common on top of cliff

1 17 Euphorbia glauca
common round tops of cliff

prostrate, glaucous, reddish, flowers
black red
capsule, fruit pale grey blue

characteristic, and dense
habit, quite moist
and mossy.
st and succulent, dominant
on open cliff face, both seaward
and inland large flow holes
- rock

shaggy aromatic herb, branched at base,
leaves crowded fleshy, flowering heads
white.
prostrate, stems & petioles succulent
only slightly aromatic when crushed;
flowers white. fruit immature
prostrate forming mats, flowers
~~purple~~ pinkish white.

prostrate forming mat, flowers white

prostrate to ascending, flowers
purplish-pink.

prostrate, leaves margined translucent
leaves fair - sub-fleshy

plant very glaucous, stems red, flowers
purplish-black.

N.S. 1917

S. 30 1/2 W 21st February
Grevillea synthetica n. sp. Col.
common round Cape ½ N.E.

1 ½ at Cape ½ N.E.

4 50 Isolated
standing on old sheep camp on edge of Cave creek

5 at Cave
in Cave creek, common

Fingermouth 21 & 26. 1917

3. 30 12½ W Kingo & Colorado

20 S.W. South of Tasman
South end of Kaikoura 2½

Large open bay, hilly country
behind scrub

2. 30 12½ Pimelea Gnidia
rare

1 14 E Kaweka
common, mostly pasture flowering

1 35 Cyrtandra
common

2 16 Olearia
very common in part

prostrate, leaves fleshy, Eurybia
in cross section

plant red, leaves fleshy with green tip,
buds pinkish

prostrate flowers yellowish, leaves
finer and fleshy, fruit orange red.

campions, spider shrapping

leaves very glaucous beneath, bronze-
purple above, fruits green - used for
room decoration.

root from recumbent base, flowers white

rayo white

prostrate, fruiting spikes erect

plant red

N. 1909

2/11 February

4. 30 m.) Rhopala biseta Lab
accessible

2 20 Cupania
accessible

1 Ry Xerbera dichondraefolia dichondraefolia
rare

3 30 Ficus
dominant in many parts of bog

1 H Garcinia
edge of bog

2? 32. Blechnum serra-serrina
edge of bog

33 Thelypteris
accessible in bog

Habitat 2/11 February.

4 30 34
Small wood near bank of beach

What appears to be a monopodial
is shown not to be [illegible]
leaves (only 2 or 3 shown) of
North Beach and (Hawk's nest) from
near [illegible]
probably planted.

plant nil, flowers white

small very dense tuft

prostrate pale green, fronds orange fruit y.
leaves [illegible]

compact, flowers brownish

leaves bronze green, fronds bright red.

fertile fronds red

dark yellow golden yellow

NI 1947

[illegible] February

Rowan, just north of Mocksville
Rocky wooded ravine, on rotted
L 30733 Asplenium dicranodraefolia

2 do Fine
common

3 do Pteris
common

[illegible] February Cabin Creek
Small ravine in Davidson County
S 30734 Asplenium

Still shining small and lovely on the rocks
Fairly common in favored
J. 30735 places
of Asplenium

Mrs. Hendricks [illegible] ravine
in fine example of Asplenium
Pteris [illegible]
Great [illegible] [illegible]
Thin Cyrtis [illegible] [illegible]
[illegible]

[illegible] Creek in Spring Tunnel
[illegible] Asplenium dicranodraefolia

Asplenium ebenoides [illegible]
Pteris
[illegible] cristata [illegible]

Fine Plot

Asplenium, common on rocks from Cabin Creek
Pteris cristata, common [illegible]

Asplenium dicranodraefolia, common on rocks from
Cabin Creek

The rock in this area, both in the cliffs and in the glacial erratics, is of a finely bedded gneiss.

 [illegible]

2? February

[illegible] [illegible]

epiphytic on [illegible] tree trunks

[illegible] (Sebastiania?)

abundant epiphyte on tree trunks

[illegible]

fallen tree trunk in forest

4 72 [illegible] [illegible]

in forest

1 7

parasitic on [illegible] [illegible]

4 [illegible] [illegible]

occasional in forest

[illegible] [illegible] at [illegible]

3 73 [illegible]

common in forest

3 76 [illegible] ~~[illegible]~~ avicenniaefolia

common in scrub

3 77 [illegible]

[illegible] [illegible] in forest

3 [illegible] [illegible]

common on banks & [illegible] in forest

3 79 [illegible] ~~[illegible]~~ dichondraefolia

common along [illegible] in forest

1st March — same

4 80780 Aristotelia fruticosa

in scrub on moraine

4 81 ~~Pernettya~~ Pernettya Pernettya nana Col.

~~[illegible]~~ on [illegible] mossy bank in scrub

on moraine

[illegible] & [illegible] [illegible]

[illegible] [illegible] [illegible] tree trunks, [illegible]

[illegible] leaves pale beneath [illegible]

fruit white [illegible]

[illegible] ~~[illegible]~~ [illegible], [illegible]

[illegible] [illegible], [illegible] [illegible]

[illegible] 3 m tall [illegible]

[illegible] [illegible]; fruits [illegible]

small tree 6 m tall; leaves [illegible]

beneath [illegible]

with [illegible], fruits green, bark [illegible]

& [illegible] [illegible] [illegible] 2 m tall, leaves

[illegible] [illegible] irregular in shape

[illegible] 1 m tall [illegible]

[illegible] [illegible] white

[illegible] fruits white

[illegible] bright green [illegible] fruits

orange [illegible]

[illegible], [illegible] [illegible]

green [illegible] pale beneath; fruits orange.

shrub 2 m tall; fruits pink

depressed shrub 2-6 dm tall; fruit immature

N 2 1949

1st hand 1947.

1. 30 x 2 Brunfelsia
on open mossy bank in scrub on morainal

2. 83. ~~Lauraceae~~ Cinchona Pubescens
on open mossy bank in scrub on morainal

2 x 11 Clusia ~~sp~~ clusiifolia
dominant in scrub on moraine

2 13
in deep grove on trail side common

3 16 Verbascum
on open mossy bank in scrub on moraine, abundant

1 21 Lantana
epiphyte on tree trunk in forest

~~23~~

bank 1st
In wet cliffs each side of Waka Kina
just below Tramway forest station
Thick bushed gorsonia rocks.

2 30x88. Polypodium
on rocks and rocks

2 39. Arenga (Gomutus saccharifer, Labill)
on base open rocks

1 90. Campanulaceae
on mossy bank

1 11. Lonicera Periclymenum Linnaeus
~~23~~ In wet cliff

1 12 Viola sp.
on wet patches on bare open rock slope.

4 5 15. Veronica
on wet cliff

1 2 14. Celmisia (?)
on wet cliff

2 15. Lycopodium
steep rock slopes

5 Jan.

flowers marked with purple
corolla with upper lip deep purple, lower white
with pale yellow with red spots
leaves glaucous and fleshy, flowers white
stem deep crimson-purple
rachis 2 cm tall, flowers stiff, ~~many~~ many
small crowded very fragrant white.
crimp-coated aromatic herb flowers white

bract, lobed axis supported on surrounding
plants
to drying; flowers yellowish green, corolla
funnel form

~~to~~ to vegetation here is so very
~~plants~~ as well growing in
~~crevices~~ patches in the bare rock.
~~It~~ for as the water is evidently
~~due~~ to be kept cool rather than refrigerated.

root stout, rhizome 3 cm tall, flowers greenish-
white
leaves pale green, stem succulent

leaves glaucous, rock fleshy; stem crimson purple

prostrate and creeping herb

prostrate, stoloniferous

~~one~~ one stem 6 inches, leaves thick and fleshy
branches red.

For good description of the vegetation and list of species see L. Cockayne & E. Teichelmann The Glades Reserves of Northern Appendix C of Ann. Rept. on Scenery Preservation for year ending Mar. 31/1924 pp. 1-11, 1925

Range-Cumbe

[illegible] from, about
[illegible] m tall.
[illegible] to hedge 1 m. tall,
leaves variously pungent,
[illegible] fruit black, fleshy.

2 1907

Sec branch
along Susquehanna River from 2 to 3 Keeler 900 ft altitude

1 1908 Sciurus hudsonicus
chirking near burrows in clearing in hemlock-beech forest

1 " Marmota monax
one killed near burrow in clearing

3rd branch
Ingersoll Spring Susquehanna River, 3 mi N Keeler
Pond 1960 ft altitude.
Above hemlock-beech forest

2 1908 Lasionycteris
common along trail under trees

1 " Lasiurus borealis cinereus
Black Rock road, edge of forest

1 "
along trail under trees, perennial

1 "
common along road in forest

2 " Eutamias henryhowei
one of dominant trees in forest

5 Dr

Hemlock-white pine-beech forest
& ravine

Black & white pine-hemlock forest

Black & white pine-beech forest

ridge slope

perennial brook along bright green stone
pole below intake
ridge white, then yellow

stem decumbent & ascending, plant robust
along stem

leaf 10 cm 5-11 from thick, sessile

504 N.Z.

Cladopus chaunocladus (Pl. 1 [illegible]

Epilobium pedunculare A. Cunn.

[illegible]

Lobelia gelata Colenso

[illegible]

Veronica salicifolia Forst. f.

[illegible]

Veronica [illegible]

[illegible]

Nertera depressa Banks & Sol. ex Gaertn.

[illegible]

Books on N.Z.
Old New Zealand by
T. L. Mannering Christchurch, [illegible]
Whitcombe & Tombs Ltd. (wraps) '76

1919 New Caledonia

Feb 6 - Pic du Paon Com.
Montagne des Lemuriens.
16 km. nor of Noumea

low spreading bushy tree
Com. at ends, flowers white
annual tree, fr green

CONIFERALES of NEW-CALEDONIA

-:-:-:-

Agathis Ovata
- Lanceolata
- Hypoleuca
- Grandifolia (Moorei)

Dacrydium Araucarioïdes
- Balansae
- Guillaumini
- Taxoïde
- (Lycopodioïde)

+++

Podocarpus Longifoliatus
- Comptoni
- Sylvestris
- Ferruginoïdes
- Novae Caledoniae
- Minor
- Gnidioïdes
- Vieillardii
- Ustus

+++

Araucaria Balansae
- Bernieri
- Cookii
- Rulei (Pendula)
- Rulei
- Montana
- Muelleri
- (Humboldtensis)
- Bidwilli (introduced)
- Excelsa -id-

+++

Callitropsis Araucarioïdes

+++

Libocedrus Austrocaledonicus
- Chevalieri

+++

Callitris Neocaledonicus
- Sulcata

+++

Acmopyle Pancheri
- Alba

+++

Austrotaxus Spicata

FRENCH OCEANIA INSTITUTE

The FRENCH OCEANIA INSTITUTE is entrusted with Scientific Research in the South Pacific, research made in a general frame of scientific research organized by the OFFICE OF COLONIAL SCIENTIFIC RESEARCH.

The OFFICE OF COLONIAL SCIENTIFIC RESEARCH is the Scientific Department of the Ministry of Colonies; its aim is to establish in the whole of overseas Territories a net of accomodations forming a sound material basis for Colonial Scientific Research.

Thus, there is actually:

- In Western French Africa, an Institute of Black Africa in Dakar, with annexes in Soudan, Guinea, Ivory Coast, Mauritania and Dahomeyland,
- In French Equatorial Africa, an Institute of Central African Studies in Brazzaville with annexes in Libreville, in the district of Bangui and the Tchad area,
- In Madagascar, an Institute in Tananarive, with annexes in Tuléar, Antsirabe and St. Paul's Island,
- Institutes in Cameroun and Togoland.

Last, for the Pacific, the FRENCH OCEANIA INSTITUTE, polyvalent scientific establishment, which is to organise and coordinate scientific research in the Pacific area, and more generally:

- to incite, promote and carry out all scientific work interesting the Territories of French Oceania,
- to assume the relations and collaboration between the French

Oceania Institute and the Scientific Institutions of the Motherland and nearby countries.

Created by a Decree dated August 2nd 1946, the FRENCH OCEANIA INSTITUTE really started work at the beginning of 1948. It has settled in buildings transfered by the U.S.A. in virtue of the BLUM BYRNES Agreement.

The numerous scientific activities which ought to be his, can only be undertaken by degrees, according to a priority list, closely connected with recommandations of the South Pacific Commission.

For the present, the following branches are represented:

Zoology,

Biological Oceanography,

Phytopathology,

Chemistry,

Entomology,

Geophysics.

Other branches are still to make their appearance, in particular:

Botany,

Biochemistry,

Medical Entomology.

Studies are for the present directed towards Applied Research, so as to help development and growth of production, primary conditions for social evolution. In this view, a Consultative Research Council will be soon constituted, one of whose tasks will be to appoint aims of work for the Institute.

The actually working laboratories do not show any definitive appearance; they have just been freshly erected. The actual buildings are only temporary, and plans are drawn for the construction of lasting buildings.

Foreign specialists planning research in the South Pacific will find at the FRENCH OCEANIA INSTITUTE, laboratories and accomodations allowing an immediate start for their work.

[illegible]

[illegible] in everywhere on sedimentary soils at low altitudes, possibly because of burning, the vegetation is a scrub with greatly mixed importance. Higher up forest of Spermatophyta gymnosperms is dominant. In the upper parts of this forest Araucaria of several kinds, Agathis, Dacrydium, Callitropsis, etc. [illegible] I have not [illegible] this forest, though rather sparse, has considerable stature on the tops of peaks and ridges [illegible] dwarfed by wind exposure.

Edges should be investigated for [illegible] of invaders from sedimentary [illegible]

On the sedimentary areas seen, in the vicinity of Noumea and over to Pantouta, the [illegible], Melaleuca [illegible], is the most common tree. It is favored by the universal habit of burning. It does not dominantly form dense stands but rather forms savanna like woodland. [illegible] growth of guava, etc. [illegible] in under it. It was not apparent what would happen if this were allowed to proceed, as no area seen had been free from fire that long. The papery bark of the [illegible] is evidently very resistant. At low elevations and along rivers Casuarina equisetifolia is mixed with this. Almost all plants seen in the lowlands are introduced. The common pantropic things are much favored.

The mangrove swamps are rather young in appearance. Much of the [illegible] delta land is fresh and has not been colonized. It would be of interest to [illegible] of its [illegible] origin is the [illegible]

a dry atoll completely
closed except for a small
gap with a small reef
island on both sides. The
lagoon is divided by longitu-
dinal reefs into
irregular polygonal patches.
Finally, on the land running
to the south, differentiating
a regional pattern
suggestive of reef zonation
is the vegetation. Coconut
palms (Cocos nucifera)
and Tahitian chestnut
(Inocarpus fagifer) are
common on the land

1949 – Virginia

March 26 – Pinecroft Reservoir. Several species of Carex are coming out – Hedyotis caerulea, Viola latiuscula, Eriogonum virginianum, Acer rubrum, Potentilla simplex, P. canadensis. Water is higher than it was on Feb. 11th. – muddier.

A small ravine running into the reservoir is a silty pool about 2 m. by 4 m. which has some waste plant and a large accumulation of dead leaves. Sphagnum is abundant.

Dead leaves and plant parts were collected from the pool in a manner that would correspond to collecting of Pleistocene plant remains in a small lens of somewhat consolidated mudstone.

These leaves, etc. are roughly grouped under # 30889 with letter designations which may be subdivided later and roughly determined.

30889 a Acer rubrum
occasional

b Fagus grandifolia
common

c Kalmia latifolia
occasional

d Pinus virginiana
rare

e Carya
occasional

f Liriodendron tulipifera
rare

g Sassafras albidum

h Quercus alba
rare

i Quercus alba

Locality: Fairfax Co., Virginia
Occurrence: Silty pool about 2 m. by 4 m. in small Ravine running into Reservoir.
Date: March 26, 1949
Coll. T. R. Fowler No. 30877
Remarks: Leaf, leaves and plant parts collected from pool in a manner which would correspond to collecting of Pleistocene plant remains in a small lens of somewhat consolidated mudstone.

sum ?

sea

1949 – Virginia

March 26 – Pinecroft Reservoir, several spring flowers are coming out – Hedyotis caerulea, Viola latiuscula, Erigeron [illegible] pulchrum, Acer rubrum, Potentilla simplex, P. canadensis. Water is higher than it has been this winter.

In small ravine running into the reservoir is a silty pool about 2 m. by 4 m. which is a [illegible] ten [illegible] of a [illegible] D. [illegible] flo [illegible] of P. [illegible] con- [illegible] gro- [illegible] lett- [illegible] and

[illegible] tion [illegible] rich [illegible] at [illegible] ing [illegible] ob- [illegible] ch- [illegible] ith [illegible] ; [illegible] .

30839 a Acer rubrum
occasional
b Fagus grandifolia
common
c Kalmia latifolia
occasional
d Pinus virginiana
rare
e Carya
occasional
f Liriodendron tulipifera
rare
g Sassafras albidum
rare
h Lindera benzoin?
very rare
i Vaccinium corymbosum?
very rare
j Amelanchier arborea
very rare
k Quercus
common
l quercus
common
m quercus alba
common
n quercus alba
common
o quercus alba
occasional
p. quercus alba
rare
q Quercus alba

1949 – Virginia

March 26 – Bancroft Reservoir
Several spring flowers are coming out – Hedyotis caerulea, Viola brittoniana, Thuja occ., Lithospermum virginianum, Acer rubrum, Potentilla simplex? P. canadensis? Water is higher than it has been this winter.

In a small ravine running into the reservoir is a silty pool about 2 m. by 4 m. which has some water plant, and a large accumulation of dead leaves. Sphagnum is abundant.

Dead leaves and plant parts were collected from the pool in a manner that would correspond to collecting of Pleistocene plant remains in a small lens of somewhat consolidated mudstone.

These leaves etc. are roughly grouped under # 30889 with letter designations which may be subdivided later and roughly determined.

30889 a Acer rubrum
occasional
b Fagus grandifolia
common
c Kalmia latifolia
occasional
d Pinus virginiana
rare
e Carya
occasional
f Liriodendron tulipifera
rare
g Sassafras albidum
rare
h Lindera benzoin?
very rare
i Vaccinium corymbosum?
very rare
j Amelanchier arborea
very rare
k Quercus
common
l Quercus
common
m Quercus alba
common
n Quercus alba
common
o Quercus alba
occasional
p. Quercus alba
rare
q Quercus alba

30389 r Quercus marilandica
occasional
s Quercus marilandica
~~var~~ very rare
t Quercus falcata
common
u Quercus rubra
occasional
v Quercus rubra?
rare
w Quercus velutina?
common
x Quercus rubra
rare
y Quercus velutina?
occasional
z Quercus coccinea?
rare
ab Quercus coccinea?
rare
ac Quercus coccinea?
rare
ad Quercus coccinea?
rare
ae Quercus palustris?
common
af Quercus? twig
ag Quercus? twig
ah Quercus" twig
ai Quercus? a Carya? twig
aj twig
ak branch
al Liriodendron Tulipifera cone
am Liriodendron Tulipifera cone scales
rare

30389 an Quercus acorn
rare
ao Panicum leaf ~~leaf~~
rare
ap Sparganium plant
common
aq Sparganium leaves
common
ar Sparganium plant with
occasional fruit & loose leaf
as Panicum
rare
at Typha plant
occasional with leaves
au Panicum plant wtd. leaves
rare
av infl.
aw Juncus effusus plant
occasional
ax rhizom
common
ay Scirpus stem with
rare infl.
az Scirpus plants
common
ba plant
bb plant
bc plant
bd

(Last 5 are possibly grasses)

1904 Virginia

Sept 15 - Sleepy Hollow in old fallow field, with sandy soil, partly pine barren vegetation. Potentilla very abundant

30890 Potentilla canadensis
very common

91 Potentilla [illegible]
recurvata

92 Potentilla
fragaria or Potentilla canadensis
93 Empetrum nigrum

Most of Potentilla show notched petals (30890) but with them are a few with perfectly entire petals (30891). Hair, habit and leaf shape seem identical. Both are attacked by a rust (30892). Put markers by 3 plants of each.
Rooting at node of last years runners. Fls. yellow, petals slightly emarginate fls. yellow, petal, entire, rounded at apex.
(also seen on ~~Potentilla simplex~~ 30892)

Empetrum, stigmas green

 1947 Maryland

✓✓ April 26 – Soldiers Delight Ridge [illegible] of [illegible] [illegible], Baltimore Co.
outcropping of ~~[illegible]~~ [illegible] with thin soil [illegible] along with strips of deep black friable soil [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
The deep [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]

30894 Arabis lyrata
common
95 Cerastium arvense var. villosum
common
96 Hedyotis caerulea
common

Apr. 18–19 trip to Pine Barrens, N.J.
Just north of Marlton is
Plainsville along highway.
Reach Pine Barrens shortly
east of this on road to
Barnegat.
Side trip to Chatsworth –
Chamaecyparis bog [illegible]
[illegible]. Many of trees
show [illegible] of wood
of trunk, rt. to left. This
occurs on trees of all sizes
even small ones 1 m. tall,
found down in shelter

[illegible] portions have Andropogon
clumps, dry, as dominant,
with occasional clumps
of Cerastium, plants of Hedyotis
[illegible]. Potentilla canadensis,

Phlox and Talinum were
not seen anywhere.
Only weed noticed was
a Trifolium, prob. T. repens.
flowers white

caespitose. flowers
white. petals deeply
bifid.
flowers varying from
pale to blue-lavender,
throat yellow.

of other trees.
Drosera rotundifolia
abundant locally on
sphagnum & Chamaecyparis
bases, but tiny plants only.
Arctostaphylos u.-u.
common in rather open
dry places.
On plains pines show
depressed habit, although
due to wind. But Quercus maril.
are merely diminutive well-formed trees.
Quercus ilicifolia in many
places forms understory under pines.

1949 Virginia - The genus
" May 12, 1949 - Sheffy & Ballard
3 1949 Viola
sect. Andinium, subsect. Andinae.

" May 11, [illegible]
[illegible] of the Wood of Cliffs of [illegible]
[illegible] [illegible] above
[illegible] [illegible]
" 98. Viola [illegible]
" 97. Viola [illegible]
[illegible] of the Wood of Cliffs
1948. Viola [illegible]
[illegible] above the high
tide level, [illegible]
[illegible] of Cliffs
01. Viola [illegible] Muhl.
[illegible]

02. Viola [illegible] L.
[illegible]
07. Viola [illegible]
[illegible]
04. Viola [illegible]
[illegible]
05. Viola [illegible] L.
[illegible]

06. Viola
[illegible]
of the Cliffs
or Viola [illegible] major
[illegible]

[illegible] Cumberland Co.

with flowers white,
with small folded in the throat.

woods largely sheltered
vale (Gunnison), Virginia.

15 m. Low shrub 7-9 dm. tall,
corolla white.
- Low 7-9 dm. tall, somewhat
glaucous, fruit immature.

tuft.

shrub 3-5 dm. tall,
leaves with slightly
oily appearance, fruit immature.
shrub 1 m. tall, flowers
white.
- large shrub 2 m. tall,
fruit immature
- tree 6 m. tall, fl. greenish.

- shrub 0.6 m. tall,
leaves somewhat chlorotic
and abnormal in color,
flowers white.

- tangled vine, flowers
greenish yellow, stamens
flowers submerged

1947 [illegible]

[illegible]

[illegible]

May 21 [illegible] Winchester, Litchfield Co.
on Pleistocene terrace [illegible]

May 21 Torrington, Litchfield Co.
10 Hydrotia canadensis L.
edge of open swamp with
tidal undergrowth, near
dwelling

May 21 N.E. corner Norfolk Twp. just E. of R. end of Bensdict Pond, Litchfield Co.
abandoned pasture
old field, open community
of grasses, Bent grass, Hydrotia, Rumex
Acetosella, etc. dominant
11 Potentilla simplex
common

[illegible] clumps spreading
from a center by decumbent
stems, [illegible] ascending
at first, flowers lavender
purple with deep maroon
purple - standard.

leaflets, 3 small terminal
3 lateral, smaller -
small stiff appearance

mass collection of portions
of each of various clumps,
taken at random, but
with attempt to get all
variations seen - color
varied from definite
blue - lavender to white.
size of plant, shape of leaves,
degree of condensation of
base, size of flowers
vary substantially. - were
disregarded, color not recorded.

Flowering in procumbent,
petals yellow, emarginate.

196 1949 Connecticut – ~~[illegible]~~

30912 Hedyotis caerulea (L.) dominant over large part of field

May 29 – [illegible] forest, [illegible], Litchfield Co.

13 Hedyotis caerulea (L.) [illegible] in [illegible] [illegible] [illegible] [illegible]

May [illegible] – [illegible] garden, [illegible] ~~[illegible]~~ Woodbury, ~~[illegible]~~ [illegible] Litchfield Co.

14

[illegible] place in [illegible] garden, [illegible] [illegible] from [illegible] [illegible] [illegible] [illegible]

May 30 – Hemlock Ridge, 1½ mi. S. of New Milford, E. side of Candlewood Lake, Litchfield Co. mixed Tsuga, Betula, Quercus woods on rocky ridges, grassy meadows with many [illegible] [illegible] in valleys.

15 Potentilla canadensis L. ~~[illegible]~~. old road in woods growing with #30916. no intermediates seen.

16. Potentilla simplex Michx. old road in woods growing with #30915, no intermediates seen.

Litchfield Co. – 197

mass collection of variable population varying as in #30910. sampled same way.

Mass collection – taken at random, population showed little variation in color, all being lavender.

flowers white.

prostrate, petals yellow varying from entire & slightly emarginate.

erect to arching, petals yellow slightly to markedly emarginate.

1949 Connecticut - Maryland

30917 Hedyotis caerulea (L.)
common in meadows on gentle slopes, but much crowded by dense grass.

18 Cornandra umbellata
occasional to common locally in meadows.

19 Potentilla simplex Michx.
abundant in meadows

20
common in meadows

(21 Stellaria
22
23
24
25
. patches (obviously clones) in meadows)

June 6 - head of Broad Creek, affluent of South River
slightly brackish estuary with wooded bluffs of unconsolidated sediments

26. Elodea canadensis
abundant in water 2-5 ft. deep, mud bottom.

27. Iris
common along muddy shore

mass collection, population variable in color from pale lavender to almost white
erect, flowers white.

erect to procumbent; petals yellow, entire to prominently emarginate, erect flowers bright yellow.
Stems erect to reclining, ranging from patch to patch; flowers white, ranging as much as 200% in size, segments of petals ranging in width, anthers orange-red.

rooted in bottom, flowers floating on surface, perianth above surface. large clumps, 1 m. across, flowers purple - sepals reflexed purple distally, white ~~veined~~ with purple toward base, greenish at base, petals lavender ~~base~~ veined with purple. filaments purple with white margins, appendages purple, incurved.

19 200

1947 Maryland, Virginia

709	30728		Potamogeton perfoliatus		Anne Arundel Co. Fairfax Co. rooted on bottom, spikes held above the surface
	x		common, gregarious, in water 2-5 ft. deep, sandy-muddy bottom.		
	2	29	Bradypyrum erectum	4 m	large tuft, panicles with spikelets somewhat drooping
	1	30	Danthonia spicata	4 m	old leaves curly
			occasional on sparsely wooded bluffs		
	3	31	Deschampsia flexuosa	6 m	tufts
			fairly common on wooded bluff in shade		
	1	31a	Panicum	5 m	culms & leaves straight
	1		occasional generally		
	2	34	Festuca myuros:	15 m	erect, panicle strict, spike-like, reddish.
	2		common on stable flat above bluffs		
	2	33	Festuca octoflora:	1 m.	erect to ascending, lower panicle branches tending to be deflexed. pale green in tendency to be reddish.
			common on stable flat above bluffs		
vv			30737 x 30733 grow together, do not intergrade and are distinguished until out of flower only.		
3	7				
	vv		Jersey - just west of Fe Boulevard Heights, s.e. of Falls Church, Fairfax Co. Va.		erect, branched from root crown, rays bright golden yellow.
4	2	34	Crepis		
			roadside, edge of thicket		
	vv		June 9 - Fort Buffalo, Sleepy Hollow Run, 1 mi. s. of Falls Church, weedy roadside		deep rooted, erect, leaves ascending, flowers creamy white.
3		35	Apocynum cannabinum L.		

1949 Virginia

30936 Smilax glauca
common

37 Panicum

38 Panicum

39 Panicum

June 11 - mainland across
from north end of Columbia Island
Potomac River, Arlington Co.
Riverbank thicket of small trees
and weedy undergrowth; sterile
denuded flat and hard fill.

40 Morus alba
common in thicket

41 Fraxinus americana
rare in thicket

42
in undergrowth in thicket

43 ~~Acer~~
occasional in thicket

44 Hyrgularia
occasional on sterile flat,
especially on fills of finer soil
stone.

45 Geranium
rare on sterile fill

46 Rosa
occasional on flat and at edge of thicket

Fairfax Co. - Arlington Co. line, leaves glaucous beneath variegates with dull gray-green above; flowers dull yellow.

small tree 20 cm. thick, 5 m. tall, abundantly fruiting; fruit black when ripe; bark with yellowish cast. (other fruiting, most sterile) small tree 10 cm. thick, 5 m. tall.

branched from base; fruit immature

erect, flowers yellow.