

OUR LINCOLN TRIP - JANUARY 23 - 30th 1971.

This long awaited trip, our second to Lincoln, proved just as enjoyable as the first one. It was made more pleasurable through the kindness of Drs. B.J. Godley and L.B. Moore and other members of the D.S.I.R. who all went out of their way to assist and instruct us. The account of the trip is necessarily lengthy, as we were away for eight days. To ease the burden of recording it, the account was prepared by several members, Messrs. Beever, Mead, Butler and Warren, Mrs. Hynes and Miss Mason.

SATURDAY, 23rd. JAN.

We left Auckland before day-break in fine weather in a Friendship plane. It became cloudy south of Auckland and, flying as we were above the clouds, the scene was indescribably beautiful as the sun crept up to the horizon. The trip was a good one and fortunately uneventful. We crept down to the airport at Christchurch through cloud to find that there was a light drizzle at ground level. Our bus was waiting and soon whisked us off to Lincoln for breakfast, after which the majority took to bed to make up for lost sleep.

After lunch we went by bus to the Botany Division of D.S.I.R., where we were met by Dr. Godley, who welcomed us and briefly surveyed the work of his Division. Following a visit to the library and herbarium, we inspected the gardens and glasshouses accompanied by Drs. Godley and Moore. Of considerable interest were the plots of toetoe and kowhai collected from near and far for study purposes.

It was not long after dinner before the whole party had settled down to bed in preparation for the morrow.

F.M.W.

SUNDAY, 24th. JAN. - RAKAIA RIVER.

Our first trip of the week and a good day to introduce newcomers to the South Island and to renew its spell for others. How neatly they arrange things here; at home on a trip we pass through dairying valleys, sheep farms, vineyards, market gardens and forests all in a few miles - flat for a mile, hills for another mile. Here it is all so clear cut with all the plains in one dose, the hills in another. Grain crops and fat lambs, with some potatoes, all in one lot, then suddenly hills and more hills and finally mountains with merino and half-bred sheep on the hill stations. So tidy and orderly - even the botany seems neater. For miles we saw farm crops and grass ad nauseam, the only obvious New Zealand natives being an odd cabbage tree, a Phormium tenax near a watercourse, or a planted specimen in a garden. Exotics dominated the landscape from Lincoln to our meeting with the upper Rakaia. Suddenly we were in the hills; Mt. Hutt with its hill country sheep stations, Lake Coleridge itself, then the lovely valley running parallel to the lake and filled with a string of small lakes, such gems in the sun which had at last decided to shine for us throughout the week.

The plains had gone and the tussock on the hills and patches of matagouri, interspersed with spaniards, proclaimed that our height was well over 1000 ft. - we were in the mountains. Scree scars were evident, showing

the damage by erosion, but our immediate interest was in the lakes cut off from one another by ancient shingle fans, now well covered with vegetation. At Lake Georgina we stopped to examine these shingle fan plants and that meant getting down on our knees to come to close quarters with them. While the bus was still emptying, Dr. Lucy Moore and Mr. Warren were out, heads down, examining Celmisia gracilentia in flower, tiny Carmichaelia monroi about 1 - 1½" high and Senecios of the bellidioides group. A small white flower, Vittadenia australis caught the eye. Haresfoot trefoil - "bunnies" and sweet vernal abounded but such foreigners were ignored while the small white flowered Raoulia subsericea was examined. Celmisia gracilentia with long narrow leaves and smaller flowers than C. coriacea was common. Dr. Moore showed us an exotic, Hieracium sp., which she said was becoming a menace as its leaves, about 1½" long and ½" wide, lay flat and allowed it to choke out native plants, while being too low for sheep to eat. It is a problem as, its growth habit being so like the indigenous daisies etc., there appears to be no obvious way to check it.

The main lake plants here were Ranunculus fluitans and Elodea, both growing submerged. However, these mountain lakes are not yet receiving appreciable phosphate or other fertilizer run-off from top-dressing, so no lake weed problem exists. Only in Lake Pearson, which we saw the next day, is any sign of nutritive mineral increase showing. It has been studied for forty years and only now that more intensive farming is being undertaken at one side is enrichment being found.

Moving on to Lake Selfe, we noted from the bus the larger red tussock, Chionochloa rubra or snow grass on the hills and Cassinia fulvida and the bright yellow Hypericum in the lower valley. We were interested to learn that matagouri was another of the growing list of plants which are known to undertake nitrogen fixation by symbiosis with simple organisms. This practice may help it to fertilize tussock growing nearby. Later in the week, at Bank's Peninsula, we also learnt that very recently the small Gunnera monoica has been shown to use a blue-green alga as a nitrogen fixing partner, and we saw the small patches of navy blue shiny algae, about 1 mm. diameter, under the plant.

Lake Selfe, where we had lunch, had similar vegetation to the shingle fan at Lake Georgina but, where the hillside dropped steeply into the lake, mountain beech was common. We lunched under its shade and, when on our feet again, noticed that much of the nearby scrub was not matagouri which we had ignored, but Coprosma propinqua, Hymenanthera alpina, Aristotelia fruticosa, Cassinia fulvida and Olearia avicemaeifolia. Other members noted Bulbinella angustifolia, Viola cunninghamii, Gingidium montanum (once called Angelicia) and Acaena microphylla, a species with barbed seed spines. Mr. Lediard found a small fragment of a Clematis which may have been C. marata.

From Lake Selfe it was only a few miles to the Harper River where, in drier weather, all the water is diverted to Lake Coleridge and only a dry bed is left. Time permitted only a whistle-stop, but time enough to note the scabweed Raoulia australis, Carmichaelia corrugata, smaller than C. monroi, Muehlenbeckia axillaris with its tiny black seeds sitting in fleshy white cups, and a single Thelymitra sp. One photographer got a laddershot of a lovely rowan tree in a nearby garden. Throughout Canterbury gardens, rowans in glorious red berry were a feature that attracted our attention time and time again.

Some of our members with cherished memories of Mona Anderson and the river that "rules her life" would like to have walked far enough towards

the Wilberforce River to have seen Mt. Algidus round the bend, where the river sweeps towards the Rakaiā, but time would not permit.

Returning from the Harper, we stopped at the other end of Lake Selfe, where Dianthus armeria caught every eye with its small magenta flowers. Coprosma linariifolia and Potamogeton cheesemani (in the water) were noted here. Then on to the Rakaiā Gorge bridges, passing on the way the swamp plant (niggerheads) Carex secta, which was new to some of us.

At the two bridges the island provided the most interesting find of the day. The parasite Korthalsella lindsayi growing on a variety of hosts, - matagouri, Coprosma crassifolia, Lophomyrtus obcordata and especially well on European broom (Cytisus sp). Next evening we were shown by Dr. Moore how sticky were the tiny Korthalsella seeds from the fruiting specimens. Although only 1 mm. in diameter, they could be seen sticking on branches of the host and did not wash off with water or even moderate rubbing. Some older ones could be seen, having germinated and settled down with haustoria penetrating the host.

The run home through the plains will best be remembered for a call at Barrhill settlement, where many years ago an attempt was made to settle a village according to a plan based on English villages. Although only a small part ever got past the planning stage, the area has long been a prosperous farming area and the Christchurch Historical Society is proceeding with a restoration of the buildings which were actually built, using the little St. John's church as a nucleus. The whole settlement was an oasis of oaks and other deep green English trees in a desert of grain and dry pasture spreading out for miles around.

Finally we detoured through Ellesmere County passing, at a little distance, an area which was recently found to have remained unploughed in this area of intensive cropping. Seven acres have now been reserved so that many of the indigenous Canterbury plants destroyed elsewhere by cultivation will remain and we hope thrive, to show both scientists and interested amateurs what the plains vegetation was like before the pakeha added to the maoris attacks on it.

J.B.

MONDAY, 25th JAN. Leader Dr. E. Edgar.

Another fine day and we left at 9 a.m. for Arthur's Pass. Being such a long bus trip, 90 odd miles and back, we did not have much time to spare for botanising. We drove through Rolleston, Darfield and Springfield to our first stop at the top of Porter's Pass at the southern end of the Torlesse Range. Just a few minutes there, then down the hill to Lake Lyndon, where we stopped again to look for Coprosma petriei var. atropurpurea which we had found six years previously. It was still there in the same spot.

The road then went up the valley behind the Range through the weird limestone country called Castle Hill. With mountains all round the scenery was wonderful and it was a pity we did not have time to stop. A few miles further on we came to Flock Hill, then down to Lake Pearson and close by Lake Grassmere, where we entered Cass valley at the end of which we came to the south bank of the Waimakariri River. We followed the river to the bridge at Bealey, which is just over seven miles from Arthurs Pass village. Along

this stretch we passed through some beech forest, Nothofagus solandri and, on the road banks, some specimens of Hebe canterburiensis.

Before going up to the top of the Pass we stopped by the side of a small stream for lunch and a stroll round the immediate area. On a road bank by the side of a bridge we found Coriaria angustissima, Gaultheria antipoda, Olearia avicenniaefolia and, where we lunched, some juvenile Elaeocarpus hookerianus. The next move was up to the top of the Pass and there we found an interesting bog with the following plants taken from a list kindly given me by Dr. Edgar:-

Utricularia monanthos, bladder-wort, violet flowers.

Drosera arcturi, sundew.

Donatia novae-zelandiae and Phyllachne colensoi, green cushions which had finished flowering.

Gentiana bellidifolia.

Cyathodes pumila.

Pentachondra pumila.

A small species of Celmisia and a small creeping Coprosma.

Euphrasia cockayneana, yellow-flowered, near edge of bog.

Prasophyllum colensoi.

Oreobolus pectinatus, stiff-leaved cushion sedge.

Gaimardia setacea and Centrolepis ciliata, mossy cushion plants related to sedges.

Carpha alpina, mountain sedge with feathery tufts round the seed.

Carex echinata, formerly called Carex stellulata, the star sedge.

On the way back we stopped for a few minutes at a track through the Reserve but did not have time to go very far. There were numerous juvenile and adult pokaka and I saw a good specimen of juvenile Schefflera digitata, Coprosma rotundifolia and several small leaved Coprosmas I could not identify.

The next stop was for half an hour at Arthurs Pass by the station, where we had a look at the Ranger's reserve, with a large collection of local species; also at Forestry Headquarters a small Museum. We left at about half past two and stopped once by Lake Pearson near Flock Hill, while Dr. Edgar and Mr. Warren went up a stream to find a specimen of Asplenium richardii, in which effort they were successful. We arrived back at Lincoln about 5.15 p.m. after a very pleasant trip.

L.W.B.

TUESDAY, 26th. JAN.

The weather still favoured us, being sunny and very hot. This was a day on which botany was a secondary consideration.

On the way into town we stopped at the Prebbleton Church, in the grounds of which grows an oak mighty in age as well as in size. I have forgotten the measurements, but from memory I think the spread was about 120 feet.

Our next stop was at the Riccarton Bush, where we were met by Mr. Healy of D.S.I.R., who narrated the history of the bush and told us of the troubles being experienced in its preservation. A ramble through the Reserve conveyed to us some idea of the nature of the lowland bush in the Canterbury area before the settlers set to work to clear the land for cultivation.

We then proceeded to the Botanic Gardens. Mr. Metcalfe, the Superintendent, kindly showed us round, pointing out various exotic and native trees and answering questions put by members.

Lunch was eaten on the banks of the Avon in the welcome shade of the trees. The day had become hotter and quite a few of the members vied with the ducks in keeping their feet cool in the water of the river.

After lunch we were let loose in the city, some visiting friends, some exploring shops and the beautiful cathedral, and others merely searching out a cool spot away from the heat.

In the evening we had a gathering to celebrate the birthdays of Mrs. Moor and Mrs. Hynes. Our guests included Drs. Godley, Moore and Edgar and the President of the Canterbury Botanical Society, Mr. Elder. This little function was much enjoyed by all.

F.M.W.

WEDNESDAY, 27th. JAN.

Our trip this day took us through the Ashburton Gorge to the intermontane basin at the headwaters of this river, under the leadership of Dr. Lucy Moore, assisted by Miss Mary Chapman of the herbarium staff.

The main Canterbury rivers emerge from the hills to the plain through narrow rock-bound gorges, but the gorge of the Ashburton is wider, being rather a general drawing in of the river valley, with a consolidated shingle floor bordering the river. As we approached the gorge Dr. Moore called our attention to the luxuriant growth of Celmisia spectabilis on the lower slopes of the hills, and told us how the pastoralists who occupy the hills had made strenuous efforts to eliminate the Celmisia but without avail; botanists are no doubt quite delighted by their failure. Matagouri, an occasional spaniard, various species of tussock and numerous native ground plants speak eloquently of nature's ability to withstand the repeated firing, heavy grazing of sheep and rabbit infestation which this region has suffered for over 100 years.

In the gorge we spent an interesting hour examining the mat plants, including several species of Raoulia, on the boulder floor, as well as the low bushy shrubs and trailers typical of this class of terrain. One of the prettiest was a plant of the prostrate Coprosma brunnea covered with its blue-grey berries.

Returning to the bus we continued on an easy ascending grade through the widening valley, over rolling country and past small lakes, to our lunch site on the bank of Lake Clearwater, prettily situated with a backdrop of the peaks and glaciers of the Main Divide. After lunch we explored the lake shore and adjoining slopes for a short time, then returned a mile or two along the

road to our main interest of the day on Fagans Downs, an area of old glacial moraine somewhat over 2000 feet above sea level. This consists of hummocky hills with intervening basins which pond water in wet weather but which with their porous substratum, dry out to slightly swampy flats. We covered the floor of one of these on our hands and knees, finding a rich assortment of tiny plants, disposed somewhat in circular zones from the margin to the centre, showing the result of progressive drying, although the difference in level was only a matter of inches. Of the many species of plants, one of the most interesting was a recently discovered member of the Lobelia family, Hypsela rivalis, with its numerous blue flowers; others were Pratia perpusilla of the same family; Stackhousia minima and Plantago triandra. The curious little fern Ophioglossum was growing in abundance round the upper margin of the basin. Incidentally the weather was again good.

A.D.M.

THURSDAY, 28th. JAN.

Setting off on that clear sunny morning from the flat cropping lands east of Lincoln, we were soon struck by the contrasting terrain and the varied patterns of farming on Bank's Peninsula. Undulating hill country with the distant peaks of Mts. Sinclair and Herbert rising to 3015 ft. appeared to our view. We also passed grazing Friesian cows and sheep. From our leaders Mrs. Bulfin and Mr. Sykes we learnt that in pre-European times this peninsula was forested and had two volcanoes. First of all we skirted the shores of Lake Ellesmere and sighted evidence of former volcanic action in the lava flows which extended to the water's edge. Here we were delighted to see on and around the lake, large colonies of birds, namely gulls, terns, black swans, grey herons and oyster catchers. At Birdlings Flat and Lake Forsyth beyond, were similar colonies of birds with, in addition, welcome swallows nesting under the bridges.

At the foot of Western Valley lies the oldest settlement on the Peninsula, the township of Little River, with an attractive 19th century church. After leaving here we climbed steadily until we reached Hill Top, a vantage point from which panoramic views of Akaroa Harbour may be obtained. In this vicinity we had a short break in our journey to explore Montgomery Bush, a remnant of upper Podocarp forest, now a scenic reserve. Noted here were the following plants:-

Urtica ferox, Hoheria angustifolia in flower, matai, Pseudopanax crassifolium, Asplenium bulbiferum, Meliccytus lanceolatus, Neopanax arboreum, Rhabdothamnus solandri, Myrsine australis, Hebe traversii, Fuchsia excorticata, Clematis sp., Parsonia heterophylla, Pterostylis sp., Coprosma linariifolia, Eleocharis discolor, Senecio sciadophilus, Coprosma rotundifolia, Lophomyrtus bullata, Asplenium flabellifolium, Asplenium falcatum, Griselinia littoralis, Hedycarya arborea, lemonwood, Pseudowintera colorata, Epilobium sp., Aristotelia serrata, Phymatodes diversifolium and Polystichum richardii.

Adding to our interest, on our way down through the reserve we stumbled on the fungus, red stinkhorn.

The bus continued on up the Summit Road, encircling the crater rim of Mt. Sinclair and was soon enveloped in thick mist. Nevertheless we stopped for lunch on the roadside and were delighted to find nearby Tupeia antarctica, and putaputaweta in flower. Further along this Summit Road

we discovered magnificent specimens of Danthonia, interspersed with Gunnera monica and Gaultheria depressa and, providing brilliant splashes of colour, the yellow Senecio lagopus. The rather rare Hebe layauidiana was discovered in this vicinity, much to our delight. Descending in the clearing mist, we caught glimpses of the yellow Senecio saxifragoides blooming in clumps by the roadside.

As the bus made its slow descent along that narrow winding road, we caught wonderful commanding views of Akaroa Harbour laid out far below, and clearly visible was its formation as an earlier volcanic caldera.

Our arrival in French Bay, around which the town of Akaroa is situated, was heralded with sunshine. The first thing to catch our eyes was the street naming, for here was a link with the past. Streets such as Rue Lavand, Rue Jolie and Balquerie appeared in view. The buildings too presented a style unique to New Zealand, with French design providing a strong influence. One little gem even had quaint wrought iron balconies and shuttered windows, which brought back memories of like houses in the villages and towns of France. The styling of the Roman Catholic Church in Rue Lavand resembled Continental architecture with all its beauty.

After a short ramble through a reserve of mixed exotic and native bush, we returned to explore this fascinating little town. An attraction to us all was Langlois Eteveneaux House, of beautiful old timbered design and understood to have been prefabricated in France for shipment to New Zealand in the early 1840s. Of particular interest was the museum at the rear, displaying a wide selection of objects from Banks Peninsula's rich past.

We were loath to leave this charming town where sub-tropical plants flowered in abundance and an air of peace and tranquillity prevailed.

M.

FRIDAY, 29th. JAN.

We travelled over the plains to the north of the Waimakariri River. Our leader was Dr. Molloy who gave us very interesting information on the geological history of the plains and the methods used to get the maximum production from them at the present time.

We stopped at View Hill to spend a short time looking through part of a relic Podocarp forest, containing both hard and black beech, matai, miro, pokaka, lanewood, Loranthus micranthus and many others familiar to us amongst the usual composition of this type of forest.

Then on to Ashley Gorge to lunch by the quiet waters and note the native trees and ferns under welcome shade.

On the return journey we had the opportunity to stop at Wright's Road to look at an isolated area of almost pure kanuka, Leptospermum ericoides. Up to 10 Ft. tall this had an understory of Cyathodes juniperin, Carmichaelia robusta, and Coprosma intertexta. This climax vegetation, which appears to show more tolerance to very dry conditions, is of great biological interest and, fortunately, is under the control of the D.S.I.R.

P.H.

SATURDAY, 30th. JAN.

On this our final day at Lincoln, the trip was led by Dr. Godley. The weather was not as hot as it had been but was by no means unpleasant.

We travelled north through Weka Pass, passing large limestone outcrops, some of which had weathered to take fantastic shapes. One resembled a frog and another a giant gecko.

On reaching the farm of a Mr. Hodgens in Pyramid Valley, we were taken to a swampy depression in which were discovered the bones of many moas of more than one species. It is believed that the moas with their long legs became trapped in the mud and ultimately died of starvation.

This farm was also rich in limestone outcrops and those having cameras were soon busy recording for the benefit of others the wonders of nature.

Our return journey was made through Scargill. Sophora prostrata was quite plentiful in some of the paddocks we passed and Dr. Godley took the opportunity of collecting a few specimens for his Division.

Our plane journey home to Auckland was again pleasant and uneventful. We reached Mangere airport in fine, mild weather, found our bus awaiting us and were driven off feeling quite fresh and happy.

Many points of interest will have been overlooked in this report. For this we apologise, but no doubt we will be forgiven for an attempt to keep it down to reasonable size.

In conclusion we must once again extend our heartfelt thanks to the members of the staff of Botany Division of D.S.I.R., without whose help and advice the whole trip would not have been such an unqualified success.

F.M.W.

HUIA.

20th March.

A.D. Palmer.

Our March trip was to the Huia area. We left the bus at the foot of the newly constructed earth dam and started out by climbing the dam face. This must have been one of the noisiest starts to an outing ever, as a result of the heavy earthmoving equipment that was being driven around and about us at seemingly breakneck speeds. Having safely negotiated this hazard we stopped at a point overlooking the area to the rear of the dam, whilst our leader, Mr. Mead, explained the workings to us. He told us that the flooding of the area was due to begin in April and would take from 3 to 6 months to complete.

We walked on up the metal road, through tall tea-tree dotted with Dodonaea viscosa, Knightsia excelsa, young kauri, rimu, Corynocarpus laevigatus, Aristotelia serrata, Myrsine australis, Pittosporum tenuifolium, Geniostoma ligustrifolium, Dysoxylum spectabile, Olearia rani, Podocarpus totara etc.