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ARBOR DAY.

By J. G. MacKenzie, N.D.H. (N.Z.)
Director of Reserves, Wellington.

(Broadcasted on behalf of the Institute, from 2YA Wellington
on 7th July, 1936.)

Arbor Day this year is to be held in this, the Wellington District, on August 5th. The Hon. W. E. Parry has made a special appeal that all schools and colleges should, in some way, celebrate this day. As most of you know, Arbor is the Latin for a tree. Arbor Day, therefore, is the day set apart for the planting of trees and also, incidentally, for thinking about them and their value to human beings, by reason of their beauty and utility.

Arbor Day originated some seventy years ago, when the lack of trees was beginning to be felt in parts of the United States of America. Owing to this scarcity, there was a noticeable harshness of climate and a dull monotony of scenery. It was decided to dedicate one day in the year for the express purpose of planting trees. The movement grew. It was realised later that, if a new Gospel is to have a permanent influence, it must be instilled into those who are hereafter destined to be the citizens of and to govern the country, so children were brought into the movement.

The movement spread to New Zealand in the course of time and, in 1892, the Government of the day decided that the 4th of August should be observed as a public holiday for the purpose of planting, with all due ceremony, trees and shrubs in suitable places on public and private property.

In 1916, during the War years, the recognition of this day as a public holiday ceased, and until last year any observance was very half-hearted. This, to all tree lovers, has been a matter for very deep regret. To Mrs. Knox Gilmer, the esteemed President of the Wellington Horticultural Society, great credit is due for her wonderful assistance towards the revival of Arbor Day and all it stands for.

Apart from the actual planting of trees, something more is required and should be emphasised in respect of Arbor Day, that is, a tree sense. The genuine love of trees and the great part these play in the life of the country and the great gap, when there is a lack of trees, is far from being developed in New Zealand. Arbor Day can help to evoke this tree sense and arouse the dormant enthusiasm for trees in the general community of all classes in this Dominion, and particularly to awaken, in the youth of the Nation, a love of trees, a pride in them as a valued National possession, and a feeling of personal responsibility in regard to their planting, their preservation and their protection against vandalism and senseless waste. That such a sense is lacking at the present time I have realised on a number of occasions.

Some time ago, when a fire started on the William's Park hills at Day's Bay on a Saturday afternoon during the summer, and helpers were wanted urgently to prevent the fire, then in its incipient stage, from becoming a major conflagration, not more than a score of helpers, out of the many hundreds in the Park and on the beach, bothered to climb the hill and assist to keep the fire in check. Again, on a Sunday morning two years ago, during the dry summer, when a fire spread, from the gorse-covered private lands adjacent to the Wilton Block to the Council plantation on Tinakori Hills, a large number of nearby residents, also others out for a morning walk, stood by and appeared to enjoy the sight of the leaping flames among the trees, whilst a few Council employees with some outside assistance fought the flames.

If there was a prevalent tree sense among the people as a whole, the risk of an accidental fire would be a very remote one and the first sign of smoke would be a call to help. The remark of Sir Julius Vogel, many years ago, "that a swagger would burn down a forest to light his pipe," may be an exaggeration, but it must be confessed that some of the finest forests have been destroyed by such acts of carelessness.

Happily, there are signs that a tree sense is being developed in this Dominion. The revival of Arbor Day and all it stands for, also the passing and coming into force of the "Native Plants Protection Act, 1934," are signs in that direction. Subject to the provisions of the Act, every person commits an offence who takes any protected native plant that is growing on any Crown land or in any State forest or public reserve or on any road or street, or who, without the consent of the owner or lessee of any private land, takes any protected native plant that is growing there. (To take, in relation of a native plant, includes gathering, plucking, cutting, pulling up, destroying, digging up, removing or injuring the plant). As practically all native plants are protected under the Act, it only requires the hearty co-operation of all bush lovers to make it fully effective. Gone are the days when, at Christmas time, many of our shop fronts were decorated with Fern Trees and greenery, to last, alas, only a few hours before being burnt. The action of the Wellington City

Council and of other local bodies, in prohibiting the use of native greenery in the halls under their jurisdiction, has been one of the first fruits of the Act.

Apart from the beautification of the landscape, trees not only give pleasure to the artistic sense of man, but add to his comfort and have an elevating influence on his mind. Then again, trees are of great material benefit, conserving soil moisture, modifying air temperature and helping to prevent undue evaporation. On the hills, they prevent erosion. In the country, they protect the live stock against the cold blasts of winter and from summer's scorching heat. They lessen the mechanical force of the hurricane, and thus protect farm crops and fruit trees and so give a direct return in hard cash to the man who decides to spend his money in planting.

Afforestation for commercial purposes does not come into the picture, to any extent, as an Arbor Day function, but every homestead of any size would find a ten or twenty acre plantation, for both posts and firewood, a valuable asset.

New Zealand will always owe a great debt of gratitude to the late Dr. Leonard Cockayne. His death, in July, 1934, was a severe loss, not only to this Dominion, where he made his home, but to the world. Not only a world famed botanist but also a keen gardener, he made a life study of the living plant in its natural surroundings. Lord Rutherford, when conferring the award of the Darwin medal at the anniversary meeting of the Royal Society, stated that the excellence of Doctor Cockayne's work made him one of the world's foremost living students of plant association.

Dr. Cockayne's intense love of the primitive vegetation of New Zealand led him to strive to prevent undue damage through the introduction of exotic grazing animals such as deer, into the native forests. Impressed as he was by the fact that the vegetation of New Zealand had come into being, in the absence of grazing and browsing animals, he was deeply concerned at the depredations of animals introduced for sport. He led the movement to check this lamentable damage and helped greatly to arouse that national sense of the need for action based on his knowledge. That steps are now being taken, to reduce this national danger is, in no small measure, due to his work, against great opposition, in stressing, in season and out of season, the immense damage that was being done. He often sighed for the power to act on the advice that Dr. Ritter Von Goebel, the German botanist who visited this country in 1898, gave him: "Get the fools hanged before they can introduce wild goats, which indeed would eat up not only your beautiful alpine flora but even the forests, as they do in Greece."

From 1898 to 1934, Dr. Cockayne wrote many papers and books on New Zealand plant life which, even to mention, would take more time than there is at my disposal this evening. All were outstanding and received world-wide recognition. He received many honours and distinctions from overseas. The honour of the Companionship

of the Most Distinguished Order of St. Michael and St. George was conferred upon him by His Majesty the King in 1929.

Dr. Cockayne rests most fittingly in the Wellington Otari Open-Air Plant Museum near the Banks entrance, on a spot overlooking the primitive vegetation of the bush he loved so dearly and facing what is known as the "Cockayne Heights." The Museum is indeed his lasting memorial and it is right and proper that he should rest there. Sir Arthur Hill, Director of Kew Gardens, in the Obituary Notices of the Royal Society of London, December 1935, writes of Dr. Cockayne: "Few men have made such fruitful contributions to the annals of natural science or have done so much to enrich and beautify the lives and environment of their fellow countrymen." The National Art Gallery in Wellington will no doubt contain, as time goes on, many portraits of those who have made their mark in this young country. Any such collection would be incomplete without that of the late Dr. Leonard Cockayne.

Viscount Bledisloe arrived in this country with a collection of the works on New Zealand flora by Dr. Cockayne and at once became a most enthusiastic admirer of our native flora. The work he carried out and the results achieved during his term as Governor-General, in bringing the value of our forests and native flora before the people of the Dominion, are beyond praise. His oration at the Arbor Day celebration at Wellington College in 1934 was something to be treasured for all time.

He stated on that occasion:—"This fortunate Dominion has the finest native bush in the world—the most perfect collection of wild evergreen shrubs and trees (unprovided by human being) that any country possesses. But still only a few of its inhabitants realise this fact or experience the joy, happiness and mental elevation which flow from intimate acquaintance with its verdant treasures. I beg you boys and girls to be among those few and to help in making the few many. So those of you who are still at school or college, plant your native trees and shrubs, study them and love them, and when you go out into the world as grown up men and women, do all in your power to protect them from injury and wanton destruction, full of patriotic pride in the precious national heritage which they represent."

Viscount Bledisloe, to still further express his interest in and admiration of our native flora, presented a Silver Challenge Trophy to the Wellington Horticultural Society "to be awarded annually to the garden, whether large or small, showing the best and most attractive use of New Zealand plants, making due allowance for the ingenuity and resourcefulness which their employment in a small garden necessarily involves." Competitors for this Trophy have shown, in every case, very fine results, utilising the native flora in the manner that the donor wished. His desire to see more gardens, depending for their beauty on our trees and shrubs and herbaceous plants, is being given effect to,

The setting aside of the Otari Reserve as a Native Plant Museum and the decision to confine the permanent planting of the grounds at the National Art Gallery and Dominion Museum to natives, indicate that our native flora is receiving due recognition.

This should be so, to an extent unparalleled in any other territory of similar area. New Zealand's trees are her own exclusive property, they are true natives, for at least 89 per cent. of them are found nowhere else in the world. No country has been so well endowed, but in few, if any, have the beauty and permanent value of her natural-vestment, been so poorly appreciated or treasured by past generations of her population. Nature robed this land with a lavish hand. What country can display such forest products as our Rimu, Pohutukawa, Puriri, Totara, Kauri, Matai or Beech, to take our timber trees alone; our Cabbage Trees and Tree Ferns, our Mountain Daisies, our Mountain Lilies, or our giant Forget-Me-Nots, to mention only a few. The beautiful Kowhai, beloved by the tuis, which has been proclaimed our national flower, has not its equal anywhere. No non-tropical country, except perhaps Chile, has so many bush climbers. The Nikau Palm, also the Clematis when in bloom, create a picture unsurpassed in any country. The "national arboretum" of this country, for a combination of beauty, refined grandeur and commercial utility, has no rival in the world.

It is my confident belief that, as the result of the Arbor Day observance in Wellington and elsewhere, our plants will be better known among our own people, and will be seen everywhere adorning our public and private gardens. In the past they have largely been neglected. Nature Study in our schools is another good movement which is showing first class results. An experience of one of my friends, who was in a gentleman's home in Britain in 1918 convalescing after the war, should not happen with the present generation of New Zealanders. He was taken out into the garden and asked to name and describe the New Zealand plants there but had to confess that he knew nothing whatever of the plants in question, not even their names!

Good work in the interests of our national flora and vegetation, is being carried out by a number of bodies at the present time. They include the Forest and Bird Protection Society of New Zealand—President, Capt. Sanderson, who is whole-hearted in his advocacy of the restoration of the bush because with the passing of the forest also goes all bird life from this country. The New Zealand Institute of Horticulture also does much good work through its district branches keeping a keen eye on scenic reserves and stopping in many cases the falling of the bush, a danger that is ever present in outlying areas. The Rock and Alpine Society's Native Plant section is saving and propagating scarce and rare specimens of the flora. In the capital city, the Wellington Beautifying Society and the Wellington Horticultural Society are working hand in hand for the beautification and improvement of the city. Their co-operation

with the city authorities in this work and in the celebration of Arbor Day is extremely helpful.

In the past, the bush has been in many cases ruthlessly destroyed. Hills covered with bush have been cleared for settlement. In Taranaki thirty-five years ago, it was my experience to help to clear some of the steep country in that province. This meant hanging on with one hand over a steep face and using a slasher with the other. What was once beautiful bush is now a shingle slip. The forest floor which, in the past, retained the moisture for months is now, owing to the clearing of the trees and the action of wind and water, disappearing into the river and this has been the experience of tens of thousands of acres all over the Dominion.

Experience has shown that many thousands of acres of mountain areas in the Dominion, especially where they are on the shady side and lie away from the sun, would re-afforest themselves if stock were kept out and the fire danger removed. The transition stages from fern to scrub, from scrub to light bush and later still to forest, are certain, but the area must be protected from fire and grazing animals. Some help to settlers, who occupy such land as part of their holdings, in carrying out this protection, would be of great permanent benefit and would prevent flooding the low-lying lands during the winter and drought conditions in a dry summer.

However, it is not yet too late. This is a young country and, if the work of Arbor Day leads to tree-planting by every school and public body, and the consequent care and upkeep of the trees so planted, the next generation will look back with pride on the work done. A tree sense, which in the past has been lacking, will have come about and the Dominion will be a still more beautiful place to live in and to be proud of.

We have a wonderful heritage. Let all of us develop and cherish it. Every person should plant at least one tree on August 5th or as near that date as possible.

The success of planting depends on good preparation. Take out a hole 2 ft. every way—three feet is even better—fill up with good loam or any old vegetable matter. If in an exposed position, leave the soil about three inches from the top of the hole. When planting, place the tree just as deep in the soil as it was previously in the nursery. Tramp well, then give a good watering.

Selection of Trees: If natives, the following dozen small trees and shrubs are suitable for garden purposes in any ordinary town garden. I shall give them the common names:

1. Yellow Tainui.
2. The Pohutukawa (*Metrosideros*).
3. The N.Z. Lilac (*Veronica Hulkeana*).
4. The Kowhai.
5. The Red Manuka.
6. The Clianthus or Kaka Beak.
7. Lace Bark (any variety)

8. The Red Beech.
9. The Black Tree Fern.
10. The Karo—grand for an exposed position.
11. The Bronze Rangiora.
12. The Purple Veronica (*Veronica speciosa*).

A dozen good exotic shrubs and trees can be selected from the following:—

1. Rhododendron.
2. Azalea.
3. Diosma.
4. Magnolia.
5. Silver Birch.
6. Lilac.
7. Daphne.
8. Heath.
9. Strawberry Tree (The Arbutus).
10. Viburnums (many kinds).
11. Red Gums.
12. Lily of the Valley Tree (*Andromeda*).

or, if forest trees are to be planted:—

NATIVES: Kauri.
Rimu.
Totara.
Rata.
Puriri.
Titoki.

EXOTICS: Oak.
Silver Birch.
Ash.
Elm.
Beech.

—and for shelter purpose in large areas—
Pines and Macrocarpas.

NAME THIS PLANT.

By H. H. Allan, Honorary Botanist.

Botany seems to have been unfortunate from the start. "Adam," we read, "gave names to all cattle, to the fowl of the air, and to every beast of the field." For plant names his descendants have had to depend upon themselves. The botanists among them have learnt to distinguish some 150,000 species of flowering plants, and the end is not yet. The laymen have piled name on name according to their fancy. It is not surprising that there has been much confusion in both groups. Van Wijk's "Dictionary of Plant Names" credits the European white water lily, *Nymphaea alba*, with 15 English, 44 French, 105 German and 81 Dutch common names. "A ridiculous state of affairs," comments the American Joint Committee on Horticultural Nomenclature. I am not so sure. There was a lad once, Peter Bell by name I understand, to whom a primrose by the river's brim was a yellow primrose, and nothing more. Even that was something, though I have fond hopes that he really called it a coostropple, a crewel, a culverkeys, a galligaskins, a paigle, a plum-rocks, or any of the forty odd delightful names that appealed to the countryman, or his daughters. One wishes there were many such popular names for New Zealand plants. We have, in compensation, many charming Maori ones, and incidentally the Maori appropriately distinguished particular sorts when he felt the need—witness his many names for different forms of phormium. To many botanists, too, a primrose may be *Primula veris*, and nothing more—to their great loss. The horticulturist, at any rate, needs additional names for his finer sorts. But for the trade, and when we come to serious work with plants, whether as botanists or gardeners, we do need more exactness. A rose by any other name may smell as sweet, but will it sell as well? On a higher level, is confusion or clarity the more desirable? Both horticulturists and botanists, in theory, agree that preciseness is advantageous, but they have not always worked in harmony to produce the desired result, partly because their aims are somewhat different.

Listen to the horticulturist: "The confusion of names in the horticultural plant world is at present so great as to clog popular plant knowledge and actually to limit to no small degree the use of certain trees, shrubs, and flowers in our American plantings. The consequent loss to the tradesman and planter is obvious . . . Today both American and foreign nursery catalogues are filled largely with confused and contradictory lists of plant names, while popular books on gardening and horticulture and the horticultural press themselves are at sea, and little if any better off than the tradesman. It is thus often impossible for the buyer to know whether he will get what he has in mind when placing an order, or something entirely different." The botanists have long since been making determined efforts to set their house in order, and have established codes, each with its following. "A code of nomenclature is a set of rules

to aid biologists in applying names by which groups are designated in classification. Such rules have authority only through a consensus of opinion among taxonomic biologists. They represent the consensus of opinion just as do rules or codes in any other branch of human activity." The code that has by far the largest following among botanists is the one that proudly entitles itself, "The International Rules of Botanical Nomenclature." And the suspicion arises in me that many botanists unconsciously feel that in this matter, "We are the people, and wisdom will die with us." But surely there are others to be considered!

I take up an "International Address Book of Botanists" and find some 5,000 names listed. I know there are more, if only because some of my own correspondents are not mentioned. Shall we say 10,000 professed botanists, to all of whom the names to be applied to plants are of importance? They have by no means solved all their many and complicated nomenclatorial problems, but they have agreed on sets of rules that, with modifications resulting from experience, will eventually lead to the desired goal. I look up the page on which are recorded the botanists of New Zealand, and find a modest fifty. Again I know there are more. Shall we be bold and say 100 botanists in this country are concerned with the correct naming of plants? Probably all subscribe to the rules called "International," and try to observe them in practice. But among the million and a half people of these islands there must be at least 20,000 interested in the names to be applied to the plants they grow and cherish. Apply this proportion on a world-wide scale and we see how the botanists fade into insignificance. Surely this great army of plant-lovers should have something to say about systems of nomenclature, some voice in the decisions made. Their needs are somewhat different, but unfortunately they have never become organised. It is true that International Horticultural Congresses are held, and that matters of nomenclature are duly discussed and rules formulated and amended. Thus in September, 1935, notables of the horticultural world assembled in Rome. They came armed with reports from many countries, and no doubt filled with zeal. The results of their deliberations have not yet reached me, but few of the rank and file, few even of those most concerned, appear to have heard of the organisation, much less to be familiar with the rules. There is evidently a need for education on these matters.

There is only one point I have space to deal with here, but an understanding of it, and an agreement about it, would help much towards improvement, and towards harmonious co-operation between botanist and gardener. Nurserymen and others have, very unfortunately, fallen into the practice of giving Latinised pseudo-scientific names to certain special forms of plants. Here are a few taken haphazard from a well-known catalogue: *Coprosma Bauerei* var. *Crawfordii*, *Dodonaea viscosa purpurea*, *Hoheria Osbornei*, *Leptospermum Deep Rose*, *Myrtus purpurea*, *Olearia macrodonta* variety, *Phormium tenax alba lineatus*, and so on and so on. The

botanist seeks in vain for some indication of system in this splashing on of names, some definite indication of the exact origin of the forms named, some statement of their status. Does the insertion of the term "var." mean anything in particular, he wonders, or its absence? Is there some subtle difference between adding "Deep rose" and "purpurea"? He may even deplore the violence done to Latin grammar, though he is not himself always guiltless in that regard. But, if he be gardener as well as botanist, he recognises that these special things need special names.

Can we achieve anything like order in place of chaos? Let me quote the words of a distinguished botanist, who has done immense service to horticulture in many ways, Professor A. Rehder of the Arnold Arboretum. "The purpose of botanical nomenclature is classificatory; in the case of varieties it aims to provide a name for each of the groups into which the whole mass of variations of a polymorphous species may be divided, the name being usually based on a type around which a number of more or less similar plants are grouped. The purpose of horticultural nomenclature is selective; it aims to give a name to a certain selected outstanding form without considering its relation to others. The name is therefore that of an individual plant, usually propagated vegetatively and thus representing practically a part of the original plant; or in the case of garden forms raised from seed, the name is applied only to plants exactly like the mother plant, deviations are discarded or if of horticultural merit, are made the starting point of a new race under a different name. It is therefore advisable that such individual plants or equivalents of individual plants should receive names different from botanical names which represent group names . . . a horticulturist who gives a Latin name which forms part of a botanical combination does so to his disadvantage, for under the botanical name, according to the rules of botanical nomenclature, other similar forms can be classed which may be of inferior horticultural value compared with the plant originally sent out under that name, e.g. the name *Berberis Thunbergii* "Silver Beauty" or "Silver Beauty Barberry" stands for a distinct form and should not be applied to any other form however similar, while under the name *B. Thunbergii argentes-marginate* other variegated forms may be grouped, differing perhaps in the character or colour of the variegation and possibly of inferior horticultural value. Thus in purchasing a plant under *B. Thunbergii argenteo-marginate* one might receive a plant inferior to the original form, while as "Silver Beauty" one can expect a plant exactly like the original form and has a right to refuse any inferior substitute. Likewise a name like *Thuja occidentalis f. aurea* may be applied to several yellow-leaved forms differing perhaps in the shade of yellow and also in other slight characters as habit, but a name like "Meehan's Golden" stands for an individual form of *Thuja occidentalis* and its vegetative progeny.

Horticultural forms which originated from hybridisation should be treated similarly. The name in the vernacular stands for the individual plant while the botanical name stands for the group, e.g. *Cattleya* "Lord Rothschild" stands as the name of the original hybrid form so named, while *Cattleya Rothschildiana* is the group name for all the hybrids between *Cattleya Dowiana* and *C. Gaskelliana*.

So *Leptospermum scoparium* "Leonard Wilson" applies only to the original "double" flowered plant discovered by Mr Wilson, and to its vegetatively produced progeny, whereas *Leptospermum scoparium alba* fl. pl. (so the name stands in the catalogue I am looking at), while it may originally have been applied to a particular plant, can be used for any double flowered form of manuka provided it shows no trace of colour other than white. For tinted forms we find the equally elegant name *L. scoparium rosea* fl. pl. Further, the vernacular name can be applied direct to the generic one, e.g., *Leptospermum* "Leonard Wilson." Where necessary, the name of the originator of the application can be attached. *L. scoparium* "Leonard Wilson" Cockayne. This should always be done in the first instance, with a description of the plant, a statement of its origin, and a reference to its botanical status. Any one proposing a vernacular name should make sure that it has not already been used in the same genus. Rules that have been drawn up for the guidance of those publishing names of this kind should be carefully followed, but my main plea here is that the use of Latinized names should be abandoned, as should the term variety. There are now available in New Zealand a number of journals where vernacular names could be published, with descriptions and remarks on the history of the forms.

Such information would be very welcome to the botanist. He has his own definite rules to follow, and has to give a Latin description of any new form he names. He is allowed to ignore names published without any description, which he stigmatises as *nomina nuda*. The present writer is attempting, in his spare time, to classify the many different forms of *Veronica catarractae* found in the wild state. In trade catalogues he finds such names as *var. diffusa*, *var. irrigans* (applied by botanists in the past). He knows that much research is still required before the application of these names can be accurately determined, and wonders how the nurseryman can be so confident that he has the "correct" things. He finds further the name "*var. Seatonii*." He searches in vain for any botanical description, but notes that the form he has seen under this name is well worthy of a horticultural name. If he wishes to keep *Seatonii* he has to seek information (feeling that it will be love's labour lost) on (1) who first gave the name, (2) to what particular plant, if any, it was given, (3) what was the origin of this plant, and (4) what is its exact botanical status. He still has to find out how far the name has been kept restricted to this original form. Will it be any wonder if he shrinks from this labour, and exercises his right, in

the botanical world, to ignore the name *var. Seatonii* altogether? Whereas, if the plant had been originally called *V. catarraetae* "Frederick Seaton" he could at least refer it to its place in his classification, and welcome the establishment of a suitable name for this particular horticultural form. If this article helps to such a simplified and useful method of naming by the horticulturists, it will have served the botanist and the horticulturist alike. It would be a first step to producing a list of standardised plant names for the many excellent garden forms of our native plants.

REFERENCES.

1. Standardized Plant Names. Published by the American Joint Committee on Horticultural Nomenclature. Salem. 1924.
2. "Note on the names of horticultural variations," by A. Rehder, in *Journal of the Arnold Arboretum*, Vol. X, 1929, p. 65.

Note.—The N.Z. Alpine and Rock Garden Society drew attention to the practice of many gardeners of applying Latinised names to such forms or varieties of plants as they wish to label for trade purposes and the matter was referred to the Hon. Botanist.—Editor.

TEMPERATURE AND THE MT. EGMONT FLORA.

Vivian Street, West,
New Plymouth.

July 7, 1936.

Dear Mr. Nicoll,

Some years back, Mr. A. W. Burrell and I were interested in the effect of temperature on the flora of Mt. Egmont and, subsequently, Mr Burrell carried out observations with thermometers which I standardised. The results of his observations may be of sufficient interest to warrant a place in the Journal.

Min. Winter Temperature on the S.E. Slopes of Mt. Egmont
1933-34-35.

During May in each year, minimum Fahrenheit thermometers were placed:—

1933.

(a) in a hole in a living totara (*Podocarpus Hallii*) two feet in diameter and 3440 feet above sea level. The hole was bored 2ft 6in. above ground and tightly plugged after insertion of the thermometer.

(b) on the ground at the foot of the tree mentioned in (a).

On 30th August, 1933, the Thermometers showed that the minimum temperature for that year was (a) 30.5 deg, (b) 30.0 deg.

1934

(c) among the bare limbs of the same Totara, about 15ft. above the ground and about 7ft. above the general scrub level.

(d) as in (b) above.

On 30th August, 1934, the Thermometers showed that the minimum temperature for that year was (c) 23.0 deg., (d) 29.5 deg.

1935

(e) On the bare slopes of the mountain 4,500 ft. above sea level.

(f) as in (b) above.

On 4th December, 1935, the Thermometers showed that the minimum temperature for that year was (e) 25.5 deg., (f) 31.0 deg.

Mr. Burrell observed the position of (e) through his powerful telescope and noted that the thermometer was covered and uncovered by snow many times during the 1935 winter.

Both of us were surprised at the comparatively high temperatures recorded in the neighbourhood of the Totara, there being never more than 2.5 deg. of frost on the ground at 3,440 ft. As thawing

out would always take place slowly in the undergrowth, one can realise how it is that seedlings are able to survive and flourish even at these levels.

Yours faithfully,

J. C. McDOWALL,

POTATOES AND FROST.

Vivian Street, West,
New Plymouth.
July 13, 1936.

Dear Mr. Nicoll,

After I wrote to you the other day, I thought of another aspect of frost incidence which may be worth mentioning. It is not generally known that, during a heavy frost, the temperature on the ground surface is considerably lower than that of the air one or two feet above the ground. I have made many observations using two minimum thermometers placed one above the other to prove this. On several occasions, in Stratford, the ground thermometer showed 10 degrees of frost while the thermometer 1 foot above the ground showed only 4 degrees of frost. These differences would account for the fact that well established early potatoes do not suffer much from the frost, while those planted later may suffer considerably. The earlier plants have older and tougher leaves which withstand the frost at ground level, while their young tender leaves are in the warmer air where they are not injured. This year, in our Gardens, though we have had up to 8 degrees of frost on the ground, the Epicure potatoes which were planted as sprouted tubers on April 24th are completely free from frost damage. The plants are about a foot high.

Yours faithfully,

J. C. McDOWALL,

(The writer of the above letters is the Hon. Secretary of the recently formed Taranaki District Council).

NATIONAL PARKS AND SCENIC RESERVES.

Box 1237, Wellington.
6th August, 1936.

The Hon. Minister-in-Charge,
Department of Lands and Survey,
Wellington, C.I.

Dear Sir,

National Parks and Scenic Reserves.

I am directed by my Executive Council to convey to you the following remit from the recent Conference: "That the Government be asked to promote legislation for:

1. The definition in the appropriate Act of the purposes of a National Park and a Scenic Reserve, such definition to provide that every National Park and Scenic Reserve is an area permanently set apart for the purpose of preserving and developing, by means not inconsistent with such preservation, the scenery and the natural flora and fauna (including beasts, birds, fishes and insects) of the area.

2. (1) Prohibition of (a) the introduction into any National Park or Scenic Reserve of any plant or animal (including beasts, birds, fishes or insects) not indigenous to the locality; and (b) the facilitating of the ingress into any National Park or Scenic Reserve of the spread therein of any such plant or animal provided, however, that necessary domestic beasts and birds may be introduced with the prior written consent of the authority in charge, subject to adequate control of such beasts or birds being maintained to prevent their interference with the purpose for which the Park or Reserve has been established.

(2) That the authority in control of National Parks and Scenic Reserves shall take such means as are from time to time reasonably practicable to prevent the ingress and spread of any plant or animal (including beasts, birds, fishes or insects) not indigenous to New Zealand.

3. A fine of £100 or imprisonment for wilful infraction of any of the foregoing provisions of Clause 2.

4. (1) The inclusion in the membership of the Scenery Preservation Board of Representatives of the New Zealand Institute of Horticulture, the Royal Society of New Zealand, the New Zealand Forestry League and the Forest and Bird Protection Society of New Zealand.

(2) That the Board, as reconstituted, should meet at least once a quarter.

That the Government be asked further to appoint at least three Inspectors of National Parks and Scenic Reserves. Such officers would require to have the following qualifications:—(a) Thoroughly robust health; (b) Approved natural fondness of our native flora

and fauna: (c) A fair knowledge of zoological (including botanical) science; (d) A knowledge of compass surveying and mapping; (e) Some knowledge of economic land utilisation; (f) Organising ability; and (g) Unimpeachable character.

Yours faithfully,

G. S. NICOLL,

Dominion Secretary.

NATIVE FLORA OVERSEAS.

Lydney Park,

Gloucestershire.

May 1, 1936.

Dear Mr. Nicoll,

I greatly appreciate the honour done me by the New Zealand Institute of Horticulture in electing me an Honorary (Overseas) Member—a position which I am delighted to accept.

Wishing continued success to the valuable work which the Institute is carrying on for the advancement of horticulture in the Dominion

Yours very truly

(Sgd.) BLEDISLOE.

P.S.—I am attempting to devote a section of my garden here entirely to N.Z. plants and shrubs.—B.

LODER CUP DONOR.

Wakehurst Place,

Ardingly,

Sussex.

July 8, 1936.

Dear Sir,

My mother and I very much appreciate the kind expressions of sympathy which you have conveyed on behalf of the New Zealand Institute of Horticulture. My father's interest in the Dominion was of very long standing, dating back to a visit there in the 1880's. I am indeed glad that the association should be preserved through the Loder Cup, and though I cannot claim to emulate my father's horticultural attainments I shall always be interested in the proceedings connected with the competition.

Will you please let the Executive Council know how much I value their recognition of my father's attachment to New Zealand.

Yours sincerely,

(Sgd.) WAKEHURST.

PLANT TRIALS.

Box 1237, Wellington.

27th August, 1936.

Circular to Directors,
Parks and Reserves.

Dear Sir,

As you are no doubt aware, the following remit (No. 10) was carried at the 1936 Conference:—

“That the Institute is prepared to endeavour to arrange, with the co-operation of Public Gardens and Nurserymen, for a service of systematic comparative trials of new varieties of plants and for the issue of reports thereon.”

The remit was submitted to the Executive Council immediately after the Conference, but consideration was deferred pending further information in respect of the proposed scheme. When this was to hand a Committee was set up to consider same and reported as follows:—

1. That the locality of Plant Trials should be the four centres, under the supervision of Park Superintendents, and any other locality approved by the Executive Council.
2. That as far as possible the history and pedigree of each specimen should be forwarded with the application.
3. That a fee, to be fixed by the Executive Council, should be paid in respect of each application for trial.
4. That applicant for trial should provide his own insurance.
5. That each trial should extend over a period of three years.
6. That a progress report of each trial should be furnished to the Executive Council annually with final announcement after the third year.
7. That all such final announcements should be published in the Journal.
8. That the degrees of awards should be:—First Class Certificate, Award of Merit and Highly Commended.
9. That, as occasion arises, special committees in charge of the trials and approved by the Executive Council, should be set up in each locality.
10. That all records of trials should be kept by the Dominion Secretary.

The above report was received and adopted by the Executive Council when it was decided to charge a fee of £1 for each entry for trial.

I shall be glad to hear that you will be prepared to co-operate with the Institute in this matter.

Yours faithfully,

G. S. NICOLL,

Dominion Secretary.

VIABILITY OF SEEDS.

The following circular was issued to Directors of Parks and Reserves on the 7th July, 1936, and is now published for the information of members:—

“The following resolution was carried at the recent Conference at Auckland:—

‘That the viability of seeds in different localities should be more fully investigated.’

The Department of Agriculture has no information regarding the difference in germinating capacity of horticultural seeds raised in different districts but has agreed to tests.

The matter has been discussed with the Director of the Fields Division of the Department of Agriculture, Wellington, and you are invited to forward to him samples of flower and vegetable seeds produced by you.

Samples should be about half an ounce of the larger seeds and correspondingly smaller samples of the finer seeds. With each sample should be forwarded your title and address, name of seed, year of harvest and any particulars relative to the conditions under which the seed was produced and harvested.”

INSTITUTE NOTES.

CONGRATULATIONS have been extended to Dr. W. R. B. Oliver, Director of the Dominion Museum, Wellington, and a member of the Executive Council, on his having been awarded the Hector Medal in Botany.

HONORARY BOTANIST:—The Institute is to be congratulated on having secured the services of Dr. H. H. Allan of the Plant Research Station, Department of Agriculture, Palmerston North, as its Honorary Botanist in succession to the late Dr. Leonard Cockayne.

DISTRICT COUNCILS: AUCKLAND:—The annual meeting was held on the 10th August, 1936, when there was an attendance of over eighty and an excellent commencement was made with the District Council's Coronation Park Scheme of which an interesting brochure has been received. TARANAKI: This District Council has now elected its office-bearers as follows:—Chairman, Mr. T. Horton; Vice-Chairmen, Dr. Doris C. Gordon, O.B.E. and Dr. W. M. Thomson; Secretary-Treasurer, Mr. J. C. McDowall B.Sc; Committee, Mesdames D. Hutchen and J. E. Avery, Messrs. R. J. Deare, F. J. Morshead, A. S. Hunter, G. H. Huthnance and W. Delph. The membership is about forty and excellent work is being carried out in other directions. CANTERBURY: Preliminary work is being done in connection with National Horticultural Week. Fourteen students attended the classes in practical horticulture at the Technical College, the Syllabus for which was prepared by a Committee of the District Council. The President (Mr J. A. McPherson) reports that a working plan of the scheme for the proposed School of Horticulture has been prepared for submission to the Government. OTAGO: It is pleasing to note that steps are being taken to carry out a more active policy and Mr Dennis H. Leigh, c/o Botanic Gardens, Dunedin, has been elected Hon. Secretary and Mr M. R. Skipworth, Hon. Treasurer..

EDUCATIONAL:—All students on the register have been circularised regarding forwarding their diaries for examination before the end of September. Those eligible for the various examinations have been reminded that applications must be in not later than the same date.

Advice has been received by the Executive Council, in connection with its recent deputations to the Wellington City Council, that the Reserves Committee of the City Council, to which this question was referred, has decided to take no action in the matter of providing increased facilities for the training of horticultural students until a suitable glass-house has been erected in the Botanical Gardens. The Executive Council has expressed its regret regarding this decision and has again urged that the question of providing full facilities, as in the other cities, should receive early attention.

Fifty Florists' and Seedsmen's Certificates have been issued to date and several applications are awaiting decision.

NATIONAL CERTIFICATES IN FLORISTS ART have been granted to—Miss K. M. Cowan, Miss M. E. Imrie, Mrs A. B. Mackay and Mrs E. Potter (Auckland); Mrs. A. M. Englund and Mrs E. Macdonald (Whangarei); Mrs. M. R. Horton, Mrs. G. M. D. McDowall and Mr. I. E. Watkins (New Plymouth); Mrs E. I. Lovell, Miss S. Lovell and Miss M. Lovell (Hawera); Miss E. E. Sheppard (Wanganui); Mrs A. E. Dillon, Miss E. H. Dillon and Mr D. Fairbrother (Masterton); Miss E. M. Black, Miss A. C. G. Farey, Miss E. M. Poole and Miss P. E. Waugh (Wellington); Mr W. A. Erasmus (Christchurch); Miss P. E. Thomas (Invercargill).

SEEDSMEN'S NATIONAL CERTIFICATES have been granted to—Messrs E. Allan and W. G. Stephen (Auckland); H. S. Watkins (New Plymouth); G. J. W. Cooper, W. A. G. Dentice, M. Fitzgerald, R. W. Millar, H. Robinson and T. S. Waugh (Wellington); M. Mathe-son and W. J. Thomson (Dunedin); W. F. Morrison (Invercargill).

NATIONAL HORTICULTURAL WEEK 1937.

The seventh National Horticultural Week will be held at Christchurch, commencing on Tuesday, 26th January, 1937, the programme being as follows:—

Tuesday afternoon: Official opening of National Conferences and National Flower Show.

Wednesday, all day and evening:—Annual Conference of the New Zealand Horticultural Trades Association; Continuation of National Flower Show.

Thursday, morning and afternoon:—Annual Conference of the New Zealand Institute of Horticulture; Evening, Banks Lecture.

NEW ZEALAND INSTITUTE OF
HORTICULTURE
(INCORPORATED.)

Patrons: Their Excellencies VISCOUNT GALWAY, Governor-General
and LADY GALWAY.

Vice-Patron: The Hon. the Minister of Agriculture.

President: F. J. NATHAN, Esq., Palmerston North.

Hon. Editor: Dr. W. R. B. OLIVER, Dominion Museum, Wellington.

Dominion Secretary: G. S. NICOLL, P.O. Box 1237, Wellington

Hon. Secretaries of Local District Councils:

Auckland: Miss E. F. Kibblewhite, 4 Charlton Avenue, Mount Eden.

Canterbury: J. N. McLeod, 108 Paparoa Street, Papanui, Cheh.

Otago: Dennis H. Leigh, Botanic Gardens, Dunedin,

Southland: B. P. Mansfield, Box 51, Invercargill.

Taranaki: J. C. McDowall, B.Sc., Vivian Street, West, New Plymouth.

Membership:

Individuals: 12/6 per annum (including Member's wife).

Juniors under age eighteen: 2/6 per annum.

Societies, Firms, etc., 21/- per annum.

Journal (quarterly):

To Members: Free.

Examinations:

Examinations are held yearly in November.

Students desiring examination should make early application to

DOMINION SECRETARY,

N.Z. Institute of Horticulture,

P.O. Box 1237, Wellington.