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INSTITUTE
OF
HORTICULTURE**



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Journal of the Royal New Zealand Institute of Horticulture

VOL. 13. NO. 1.

JULY, 1943.

FUCHSIAS OUTDOORS IN NEW ZEALAND.

(By Geo. J. W. Cooper, Wellington.)

Fuchsias once again are becoming very much appreciated and it looks as though they are going to be one of our favourite flowers for some years. The blooms are formed so that they hang down gracefully from the branches. For this reason they are very suitable for planting on banks and hillsides. They also look well planted against buildings—but they look charming anywhere. Unfortunately, owing to shortage of paper, space for the present article is limited, so please excuse the brevity of this article and any omissions. For this reason there is not room for glasshouse treatment.

ORIGIN: The name comes from Leonhard Fuchs, a Bavarian Botanist. Lucky man to have such charming flowers named after him! The original species are mostly natives of South and Central America. There are about seventy original species. These include *magellanica* (*macrostemma*) and *coccinea* (Chili); *corymbiflora* (Peru); *fulgens* and *splendens* (Mexico) and others.

The quaint trailing species *procumbens* (Kirkii) with its small yellowish green flowers, followed by lovely crimson berries, is a native of New Zealand; and so is *excorticata*, which grows into a small tree in the New Zealand Bush. Most of the present large-flowered varieties are hybrids, and there are now several hundred of these.

In New Zealand, Fuchsias are hardy out of doors almost anywhere in the North Island and in some warmer parts of the South Island, especially near the sea. In colder and inland parts of the South Island, they are often grown in large tubs, barrels, pots or boxes and, after pruning, are removed for the winter to bush houses or sheds. The remarks in this article apply to positions in New Zealand where they can be grown out of doors.

The writer used to think that Hydrangeas flowered out of doors longer than any other plants in New Zealand but he has found that, in warm sheltered positions, Fuchsias commence blooming about two weeks earlier and flower two or three weeks longer, i.e. they commence to flower before Christmas and often continue to flower

until June and July. As well as being lovely in the garden, the flowers look beautiful in tall vases, floating bowls, and particularly well in wall bracket vases hung a little above the eye line. Providing they are not exposed to cold and high winds, which they hate, they are very little trouble to grow if planted in reasonably well prepared soil; and if given a little attention annually, they may be expected to flower well for fifteen to twenty years. Another great advantage is that even large plants can readily be moved up to many years old. I have shifted plants twelve years old and have had them flower well again the first season.

A charming effect is made by tall varieties planted on each side of a rather shady path and trained to arch over so that in time they almost meet overhead. They would look lovely planted for pergolas and against walls or tennis courts. A good idea would be to use them alternatively between climbing Roses and Clematis. The Roses are at their best from the middle of October to the middle of December. The Fuchsias would then be in flower from Christmas until frost and, if they were in flower together, the effect would be charming.

Though Fuchsias will grow well in full sun, they prefer semi-shade; and indeed they will flower at least reasonably well where they get only a few hours direct sun in summer and practically none at all in winter. These are conditions which very few other plants will stand except Cinerarias.

POSITION AND SOIL: As has already been stated, these plants look best upon banks and hillsides. Most banks in New Zealand have clay and rock formation. Though Fuchsias will grow and flower under poor conditions of soil, it pays to take some trouble when planting. They delight in a warm, free and well drained soil and object to the reverse. Steep banks have been terraced with rocks, brickwork or totara (native timber) boarding. In the brick walls spaces have been left of about half a brick every two or three square feet. In these were inserted plants or cuttings. They have grown and flowered well and look charming. The same may be done with rock walls. You should provide for one or more small paths for weeding, etc.

The writer's garden is on a hillside at Wadestown, Wellington, and the bank of Fuchsias faces the South. This was composed of poor lifeless clay and rocks. When the first planting was made three years ago, there was not sufficient time nor good soil and compost to do as one wished. It was only possible, therefore, to remove about nine inches of the clay and rock. This was replaced with soil. In spite of the above, they grew and flowered remarkably well. It was noticed, however, last autumn, which was one of the driest for about 20 years, that some of the plants drooped a little and stopped flowering. Obviously too much clay and rock had been left. This winter about a hundred plants have been shifted. In doing so, holes have been dug each about thirty inches square, and all the rock above about three-quarters of an inch square and part of the clay have been removed. The bottom clay was then forked

up and treated with lime, wood ashes, basic slag and bonedust and there was added enough soil and a little compost to fill the hole. They should now grow and flower well for many years.

The above manures are excellent both when planting and when applied each winter. In spring and summer, a little superphosphate, blood, fowl, or other animal manure or compost will be helpful especially if they are not making good growth. They do not however require half as much manure as Hydrangeas do.

PLANTING: If the beds are to remain for five to twenty years, it is suggested that the tall and strong growing sorts be planted from four to six feet apart, mediums two and a half to four feet; and dwarfs and weeping sorts two to three feet apart. For the first few years, however, and until the plants have grown a good deal, cuttings can be put in between the permanent plants. These can, of course, be removed when they become too crowded.

Another suggestion is to plant between the permanent Fuchsias other small plants which are suitable, e.g. *Myosotis* (dwarf), *Primroses*, *Polyanthus*, *Aubretias*, *Cinerarias* etc. For summer flowering, *Ageratum* and *Begonias*, fibrous rooted, Pink and Scarlet and Red Leaved sorts and *Lobelias* especially the hanging dark blue which looks charming covering rocks or bricks. In rather shady and moist places, *Arenarias* (sandworts) make charming carpets of vivid green covered in spring with pretty white flowers. The plants are only about two inches high and cling to the bricks or rock.

In dry and hot weather the plants will need a good watering once or twice a week in the absence of rain. They like their leaves sprayed with water. The bulk of the flowers are produced on the young shoots so that good healthy growth is essential.

PRUNING is best carried out in winter or early spring. This is done by cutting hard back; usually to within (say) from one to six inches of the last year's growth and also by thinning out all small weak shoots. If plants look unsightly after a storm in May or June, some of the dead flowers and small shoots may be removed for a start.

PROPAGATION: Cuttings strike quite readily. They should be taken two to three inches long, and planted in spring, summer and autumn in a mixture of about sixty per cent good rich soil with a little manure added—twenty per cent sand the balance of compost or decayed bush mould. They strike best in partial shade and will root quicker under a frame or glass.

VARIETIES AND DESCRIPTIONS: Several New Zealand Nurserymen in Wellington, Palmerston North, Napier, Christchurch and Auckland, offer good collections of named varieties. In addition, there is also quite a number of private growers, in various districts, with fine collections of varieties. Unfortunately, catalogues and lists rarely state the heights and habits of growth and not always the size of the flowers. This is a pity because, unless these details are known, it is very difficult to plant the beds so as to show each variety off to the best advantage, i.e. the tallest and boldest at the back, mediums in the middle and dwarfs and miniatures in the

LIST OF FUCHSIAS FOR OUTDOORS IN NEW ZEALAND.

Note on abbreviations.—* In front of name means double or semi-double; A.M. Award of Merit; H.C. Highly Commended. (Both are R.H.S.)

1. Name. 2. Size flower. L. Large. M. Medium. S. Small. T. Tiny .

3. Sepals. 4. Corolla.

5. Habit, etc. Up. Upright. W. Weeping. Sp. Spreading. Hy. Hybrid. Tall. Medium (Med.) Dwarf (Dwf.).

1. Name	2 Size fl.	3. Sepals (Wings)	4. Corolla (Centre)	5. Habit and Notes.
*ABBE FARGES	S.	Cerise	Rosy Lilac	Up. Med.
ANNIE EARLE	S.	Creamy	Scarlet	Up. Dwarf.
ANDENKEN H. HENKEL (A.M.)	M.	Rose	Salmon	Hyb. Red leaf, Up.
AURORA SUPERBA	L.	Salmon	Orange	Sp. med. Good.
*AVALANCHE	L.	Cerise	Violet	Med., leaf pale yellow.
BALKON (H.C.)	M.	Pale Pink	Rosy red	Med. Weeps.
*BEAUTY OF EXETER	L.	Rosy Salmon	Self	Strong, Up. and W.
*BLUE BEAUTY	M.	Cerise	Purple	Med. Up. and W.
BRIDAL BOUQUET	S.	Blush	Self	Dwf. Up. Charming.
BRILLIANT	L.	Cerise	Violet Magenta	Tall. Up.
*C. H. E. RHODES	M.	Scarlet	Carmine	Med. Up.
COLOSSUS	L.	Crimson	Purple	Med. Up. Giant Bell.
*CONSTANCE	M.	Pink	Mauvy	Med. Up.
CRINOLINE	M.	Rosy Pink	Self	Med. Up.
*CYCLAMEN	L.	Red	Pink and Red	Med. Up.
*DELVINO	L.	Rose	Plum	Tall Up.
*DOLLAR PRINCESS	M.	Scarlet	Purple	Dwf. Up. Free.
DUKE OF YQRK	L.	Cerise	Mauve	Med. Up. and Weeps.
EARL OF BEACONSFIELD (H.C.).	L.	Pink	Vermilion	Med. Up. Long tube.
*FASCINATION (English (H.C.))	L.	Cerise	Veined	Med. Up.

FASCINATION (Australia)
GARTENMEISTER BRON-
STEDT (H.C.)
GRACILIS VAR.

M. White

Rose Pink

Weeps, Long.

M. Salmon
S. Scarlet

Scarlet
Purple

Hyb. Med. Up. and weeps.
Med. Leaves very pretty, silver
pink and rose.

GRANNY MARSHALL
*JULES DALOGES
*LA FRANCE
*LILAC QUEEN
*MME. BRUANT
MARINKA (A.M.)
MAGELLANICA ALBA

S. Pink
L. Red
M. Scarlet
M. Rosy
L. Crimson
M. Scarlet

Purple
Deep Mauve
Purple
Lilac
Mauve
Rosy

Strong Sp. and weeps.
Med. Up. Large.
Med. Up. Charming.
Med. Up.
Tall Up.
Med. and W.

(Macrostemma)
MRS. G. RUNDLE

Tiny Pearl
M. Rose

Pale Blush
Orange
Vermilion

Tall, strong (species).
Med. Up. Long fl.
Med. Up. and W.

MRS. G. MARSHALL (A.M.)
MURIEL

L. Creamy
L. Cerise
L. Old Rose

Rose
Lilac
Pink

Med. Up. and W.
Strong, Sp. and W.
Med. Up.

*PINK PEARL
ROSE OF CASTILLE

M. White
L. Scarlet
M. Scarlet

Purple
Purple Black
Blue

Very strong; Up.
Med. Up.
Dwf. Up.

*ROYAL PURPLE
SWANLEY GEM
(very distinct flat flower—a
little gem).

SWANLEY YELLOW
(Badly named—not yellow,
but orange, pink & salmon
shades).

M. Pink

Salmon

Med. Up. Sp.

TOM THUMB (Tinytot)
TRAILING QUEEN

Tiny Crimson
M. Red
L. Red

Self
Magenta
Purple

Dwarf. Up.
True weeper.
Tall. Up.

*VICTOR HUGO

front, and the true weeping varieties hanging over the rocks or bricks. For this reason, the writer has been collecting such information and now over a hundred sorts have been tabulated, as a start.

To be sure of the height and habit, one needs to see plants which have been put in (say) three years or more, by which time the type can be definitely seen.

As printing space is not available for all the varieties, a selected list has been made of about forty names which are considered splendid sorts embracing tall, mediums, dwarfs and weeping, together with other information. This will be printed at the end of this article. Some copies will be made of the full list of about 140 varieties and handed to Mr. G. S. Nicoll, Secretary of this Institute, who will post a copy upon request.

As to the meaning of the word Fuchsia, the shy young man may call it "A Heart to Let". The modern miss may say she thinks it means "Stoop down and greet me". It is hoped that, when your plants have made good growth and you walk underneath them, you will derive as much pleasure as we do from their beauty and will agree with the aptness of the old expression, "Stoop down and greet me".

It is desired to express warmest thanks to several kind friends, who have good collections, for their co-operation in comparing the growth which some varieties have made in their gardens with my own and for other information.

THE SECRETARY'S NOTE BOOK.

NEW ZEALAND ALPINE AND ROCK GARDENING SOCIETY.

The following are extracts from the July, 1943, News Letter:—

"I came across a delightful book on alpines the other day and I must order one for the Society—"Alpines in Colour and Cultivation" by T. C. Manfield. Besides brief notes on many alpines, it contains several charming line drawings, and eighty plates in colour, each plate consisting of several plants."

"I am quoting below a note on "*Iris stylosa*" from Eden Phillpott's "*My Garden*" (1906). This note seems appropriate at the season when our own Algerian *Iris* are in full bloom. And, by the way, why don't we call them Algerian *Iris*? Surely it is more attractive than *I. stylosa* which after all is not correct, or *I. inguicularis* which is correct but so ugly. The typical plant comes from Algeria, but forms are found in Greece, Asia Minor, and Northern Syria, Tunisia and Crete and other islands round these parts.

"Then once more afield, with a dust-dry, genial sirocco blowing, I went forth to find the *iris* of Algiers. There she was amid the dewy hedges of vineyards, her little heart touched with gold. She peeped about from secret places, tangled wastes, or the fierce arms of the prickly pear—that gigantic *Opuntia* whose silver-grey lights every hillside about Algiers. The purest mauve she is—just deepening in tone on the fall where the yellow signal ends with a touch of orange. A delicious network of lavender and white lies on either side of the signal bar, and runs over it faintly. The standards are of the same pure lavender, touched to a richer note at the claw. To my nose the fragrance is exactly that of a bluebell. I can shut my eyes and see an English wood in spring. But when I open them again *stylosa* reminds me of her own home."

DEFINITIONS.—The following queries, submitted by a Horticultural Society, have the answers appended:—

1. Can a Mangold be included in a collection of vegetables? A Mangold is not a vegetable and it is, therefore, debarred from inclusion in a collection of vegetables. It belongs to Agricultural rather than to Horticultural produce.
2. Are Tomatoes included in Vegetable Section or Fruit? The Tomato is both a fruit and a vegetable and schedules should always specify whether Tomatoes are to be shown under Fruit or Vegetables.
3. Is Rhubarb regarded as Fruit or Vegetable? Rhubarb should only be shown as a Vegetable.

The writer was advised that these are the rulings of the Royal Horticultural Society and of this Institute.

DAHLIAS.—The following selected lists of Giant Decorative and of Semi-Cactus Dahlias were supplied by Mr A. J. Manton, 1 Shirley Street, Karori, Wellington, upon the request of a well known enthusiast at Nelson:—

Giant Decorative:—Arthur Francis, salmon overlaid orange scarlet; Bell's Gold, pure gold, good depth, perfect stems; Charles

F. Mastick, orange; Brenda Corry, between old gold and bronze; Don Sowton, mallow purple; Duke of Windsor, dark red; Iris Ransome, primrose yellow, perfect form on splendid stems; Rita Betty, deep copper with reverse of mahogany and splendid size, stems perfect; Sydney, old rose with touch of gold, splendid long hard stems; Xantine, pure yellow and splendid form and great size on perfect stems. A more extended list is available upon request.

Semi-Cactus:—Heart of Gold, flaming orange with gold at tips and base; Moyua, lovely pink, touch of cream at base; Stabat Mater, lilac violet on white base; Millgrove, deep rose colour, largest there is; Miss Glory, pure yellow; Mrs Stewart, salmon with reverse of pink; Golden Standard, apricot yellow with bronze shadings.

MARROWS AND PUMPKINS, ETC.—An Auckland member inquired as to the reasons for failure of such crops, mentioning the scarcity of female flowers. A report by the Horticulture Division, Department of Agriculture, showed favourable conditions and correct cultivation procedure but recommended, for next season, the generous use of bonedust and potash (say) one quarter pound of bonedust per square yard and half that quantity of sulphate of potash with its equivalent in wood ashes. Mr J. A. McPherson, Christchurch, who attended the June Executive meeting, recommended also the pinching of the leaders on which, he stated, the female flowers come.

GARDENING UNDER DIFFICULTIES.—The following is extracted from a letter to Mr George Cooper, Wellington, from Mrs Ruby Seddon Woods, "Southholme," St. Margaret's-at-Cliffe, Kent, England:—"Like my sister, Mrs Knox Gilmer, I love gardening and here at The Cliffs I carry on, twenty-one miles from the enemy. . . He makes work. Trees fall down with the blast and I have to sweep well for shrapnel before I can mow, but I am feeling that I am not letting my garden down. I have two acres to care for and it is all in apple-pie order."

HYDRANGEAS.—An address on Hydrangeas was given recently, at a recent monthly meeting of the Northland Horticultural Society, Wellington, by Mr T. E. Wilkinson a well known enthusiast and successful exhibitor and a few extracts should prove of interest.

"The best time to plant is late May, June and July. You can plant, of course, in later months but it is considered that the earlier planting gives the best results. In a hole two feet deep a benzine tin of cow manure is placed below about six inches of soil. The roots are lightly covered with fine soil, then with shell lime, if a red or pink variety. In the case of a blue variety, powdered alum is used in place of the lime. About Christmas time, a very liberal mulch of cow manure is given for protection of the fine surface roots from the sun and to prevent the wilting of the flowers."

"Being in an elevated position, just below the Wireless Station, and six hundred feet above sea level, the section has full sun and wind from early morning to late evening. During misty weather it is in the clouds long after they have cleared from the lower levels of the city. All these factors have a bearing and influence on the

growth and blooming of the Hydrangeas. Reds and pinks face the rising sun and, from about noon, they have the shade of the house. Blues face the west where they have the sun from noon. *Pinus mauricata* along his front (west) boundary are at least thirty feet high with large boles but it has been found that blue Hydrangeas grow and do fairly well under these."

"When my plants are looking well and there is a Flower Show in the offing, the flower shoot, when one pip is open, is cut just above the eye nearest the ground. After smashing the bottom six inches, the stem is placed in a thin necked vinegar bottle filled with rain-water to which has been added half a teaspoonful of sulphate of iron or alum. Rain water is added as required and a minute paring is taken off the bottom of the stem. The rays of the sun penetrate through the glass and engender warmth whilst the flower feeds on the sap sealed in the stem through the smashing of its end. Watching these flowers continue to open until maturity has given much pleasure over a term of years."

"There can be no set period for my pruning as this is being done continuously as each bloom is picked, as explained in the previous paragraph. In May and June, therefore, the plants are made up mainly of flowering shoots for the coming season, which are then shedding the previous season's leaves and will soon begin to send out new side shoots. As the heads are formed the bottom side shoots are taken and planted and each should carry a bloom by the following March."

Varieties mentioned were:—Heine Siedel, Parsifal, Merveille, Miss Belgium, King George, Rosabelle, Mrs H. J. Jones, R. Felton, Sensation, F. Mathes, and Goliath.

To these might be added:—Deutschland, Niedersachsen, Baardsee, Hollandia, Hamburg, Miss Hepburn, and Duchess of York.

Kew Gardens.—Mrs Knox Gilmer has handed in the following paragraph from an English newspaper just received from her sister, Mrs Woods:—

The mild weather of the past few months has had a remarkable effect on Kew Gardens. At the same time can be seen the blossom of the flowering cherry, lilac, laburnum, horse chestnut, and crab-apple, the flowers of the magnolia, azalea, and rhododendron, and a fine display of wall-flowers, polyanthus and the last of the daffodils. Gardeners say there has not been such an unusual combination of bloom within living memory.

CONTRIBUTIONS.—If this new feature appeals, contributions from members and others will be welcomed.

PLANT RECORDING.

POTATO "DOMINION," RAISED BY JAMES FLEMMING,
SUNNY MOUNT," OHAKUNE JUNCTION.

RAISER'S DESCRIPTION:—A natural seedling, probably from "Majestic." Vigorous stems. Flower white. Tall haulm. Heavy cropper. Good oblong shape, shallow eyes. Has shown no signs of blight. Rather late variety.

REVIEWS.

Whitcombe's Complete New Zealand Gardener by J. A. McPherson N.D.H. (N.Z.), Director of Botanic Gardens, Christchurch. Whitcombe & Tombs, Limited, 1943. 6/6.

"Commencing with the Lay-out of the Home Garden, Soils and Manures are dealt with in an informative Chapter followed by Lawns, Propagation and Gardening under Glass. Spring and Summer Bedding and Perennials and Herbaceous Borders, with their lists, are unusual and will be found most useful. Hardy Trees and Shrubs, with selections and descriptions, are followed by an interesting Chapter on Tree Surgery. Native Plants are dealt with interestingly and also the Rock Garden. Bulbs and Related Plants Chapter includes a useful depth of planting chart and hints regarding various kinds of bulbs. The Vegetable Garden and the Fruit Garden are also handled convincingly and fully and also Garden Pests and Diseases. Mention must be made of the useful diagrams throughout this book.

Gardening Calendars for both North and South Island complete a comprehensive Gardening Guide and Companion.

Soil Fertility Basis of Healthy Living, by J. W. Matthews F.L.S., Wellington. A. H. & A. W. Reed, P.O. Box 2, Te Aro, Wellington. 3/.

The author is a recognized horticultural authority who has made an intensive study of soil and its requirements over a long term of years. Arresting reference is made to the loss of fertility through exported foodstuffs and the Food of the Human Machine is dealt with interestingly as also Erosion and the products of the Sea. Another worth-while Chapter is that on Humus, which includes comparative diagrams of subjects grown with and without Compost. The Chapter on The Complete Compost "is based on the Indore Process, developed by Sir Albert Howard but with certain fundamental differences" and acknowledgement is made to Mr. T. Peaty, of New Plymouth concerning his improved system of ventilation of compost pits.

GREETINGS FROM MELBOURNE.

It is thought that the following correspondence may prove of interest to our readers:—

Parks and Gardens Department,
Town Hall, Melbourne, C.I.
31st May, 1943.

G. S. Nicoll, Esq.,
Secretary,

Royal New Zealand Institute of Horticulture,
P.O. Box 1237,

WELLINGTON,
NEW ZEALAND.

Dear Mr. Nicoll,

I have been intending to write to you for some time to express my sincere thanks for the continued receipt of your most interesting journal, all of which now make a comprehensive range of literature in my library.

I would also like to pay my compliments to the wonderful spirit of your executive in keeping horticulture alive in the Dominion during the dark days we have been through in the past two years, and to regularly receive your journal covering your work was a great inspiration to me, and one which I did not hesitate to pass on to the many horticultural societies in Melbourne.

We have been able to function in a modified form in Melbourne, and the lead set by the Government in the production of home-grown vegetables, has given great impetus to this branch of horticulture, which had hitherto received but slight recognition.

As Assistant Curator of Melbourne's Parks and Gardens, my chief interests are devoted to the organisation of our Institute of Park Executives, which functions under the name of the Victorian Tree Planters' Association and, with the shortage of manpower, we have been confronted with many problems to preserve public assets which cost thousands of pounds to install and, notwithstanding the difficulties, we have carried on with good results. If it were not for the many air raid trenches which abound in our parks and gardens, their rehabilitation to their former place of prominence in the community could be quickly established. However, I think we can look into the future with some degree of confidence and we hope that the victory which is sure to come will bring with it the worthy recognition which is due to our kindred organisations.

I am enclosing a copy of the Annual Report of the Victorian Tree Planters' Association, which conveys a future policy on post war reconstruction, which we hope to carry out.

A very interested guest of our Association at this meeting was Mr. Wilson, Nurseryman of Hastings, New Zealand, and he was able to tell us much of your war-time activities.

Once again I thank you for the Journal and trust that the future will hold the means of a continuance, and perhaps a larger degree

of co-operation between our Dominions, and in particular our Horticultural interests.

With kindest regards and best wishes,

I am,

Yours faithfully,

(Signed) J. Owens

Assistant Curator.

P.O. Box 1237, Wellington,

28th July, 1943.

Mr. J. Owens,
Assistant Curator,
Parks & Gardens Department,
Town Hall,
MELBOURNE, C.I.

Dear Mr. Owens,

I have to advise you that your letter of the 31st May expressing appreciation of the Institute's Journal and of the continuance of its other activities, was submitted to the monthly meeting of the Executive Council on the 23rd June and it was left to me to reciprocate your compliments and greetings.

Regarding our activities, the only one we have dropped so far is our National Horticultural Week, which was to have been held in Hawkes Bay (Hastings) in January, 1942, but war restrictions and the entry of Japan into the war forced its abandonment after all arrangements had been made and the schedule for the National Flower Show, 1942, had been printed. We held our Annual Meeting and Conference at Wellington, as also did the Nurserymen, Seedsmen and Florists.

Finance has naturally suffered through members in the service, restricted new membership, greatly reduced examination fees and more than all National Flower Show profit.

The Journal has presented some difficulty in the obtaining of articles. The Institute has excellent support from the Horticulture Division of the Department of Agriculture and its principal and other officers but the Department has its own Journal requiring contributions. The Association of Parks Superintendents had its own National Conference in peace time and its members wrote their papers for this although we have published a few with the permission of the authors.

We are very interested in your Victorian Tree Planters' Association and its Annual Report and it was mainly for the Post War Reconstruction part that our President borrowed your letter and enclosure and sent a copy to Mr. M. J. Barnett, Superintendent of Parks and Reserves, Christchurch, as Convener of a Committee of Parks Superintendents' following on a resolution from our Canterbury District Council on Post War Rehabilitation which you would see in the April, 1943, Journal.

We know Mr. Wilson very well as a first class nurseryman and an Institute member. When Mr. W. K. Dallas, Director of the Horticulture Division, Department of Agriculture, and myself went

up to Hawkes Bay to facilitate arrangements for holding National Horticultural Week (including the National Flower Show) previously referred to, we called on Mr. Wilson who was prepared to do his utmost to help. It is many years since he gave me a Champion at the Wellington Rose Show for a "Mrs. Charles Lamplough."

In conclusion, I have to thank you for your heartening letter and to reciprocate your desire for greater co-operation between our countries particularly from the horticultural standpoint.

Kindest regards and the best of everything including a speedy peace.

Yours sincerely,

(Signed) G. S. Nicoll

Dominion Secretary.

P.S.—On reading this over I find that mention of your very worthy war activity of home-grown vegetables has been overlooked. Our Government has a "Dig for Victory" Campaign with the same object to which you will find a reference in the current Journal. G.S.N.

EXAMINATION PAPERS, NOVEMBER, 1942.

JUNIOR EXAMINATION (SYLLABUS No. 1).

HORTICULTURAL BOTANY.

(Time allowed—Three Hours.)

NOTE.—SIX ONLY of the following questions are to be answered, including No. 8, which is compulsory.

Use diagrams to illustrate your answers when you can do so.

All questions are of equal value unless otherwise stated.

1. Describe the form and functions of the underground parts of the Dahlia and the Broad Bean.
2. In what ways are the following (a) spread naturally, (b) propagated? Strawberry, Heather.
3. In what parts of plants is cambium found; what is its function; what bearing has it on methods of budding and grafting?
4. Name three weeds of the vegetable garden, and state what botanical features have to be considered when eradicating them.
5. What are the major elements required for the proper growth of plants? Explain how the plant obtains any one of them.
6. How would you carry out the partial sterilization of soil for a small garden? What facts connected with the soil make this proceeding advantageous?
7. What facts concerning the structure of a flower, and the functions of the parts would you have to know when attempting to breed a new sort?
8. Describe as fully and exactly as you can the specimen supplied by the Supervisor.

JUNIOR EXAMINATION (SYLLABUS No. 1).

PRINCIPLES OF PLANT PROTECTION.

(Time allowed—Three Hours.)

NOTE.—SIX ONLY of the following questions are to be answered. Use diagrams where these illustrate your remarks.

All questions are of equal value unless otherwise stated.

1. Describe the preparation of burgundy mixture.
2. Outline the life history of a moth.
3. How are virus diseases of plants spread during the growing season?
4. Describe the processes of (a) disinfection of bulbs, and (b) of Strawberry runners by means of hot water.
5. Give the developmental cycle of a mildew.
6. Describe the structures which enable a spray nozzle to produce a mist spray.
7. Outline the spray programme necessary to combat black-spot of Pears.
8. Give the main physical properties of a summer petroleum oil.

INTERMEDIATE EXAMINATION (SYLLABUS No. 2).

PRINCIPLES OF HORTICULTURE.

(Time allowed—Three Hours.)

NOTE.—SIX ONLY of the following questions are to be answered.

All questions are of equal value unless otherwise stated.

1. Describe the effect of shade on crops and plants. Under what conditions is it beneficial?
2. Describe an ornamental plant association specially suited to either the east coast, or west coast of either Island of New Zealand.
3. Write a short essay on liquid manures and their use.
4. Describe common and serious mistakes in composting organic material to form humus for application to the land.
5. Write a short account of soil organisms whether injurious or beneficial, to plant growth including the conditions under which each flourishes.
6. Describe the Lorette system of pruning; where did it originate; under what circumstances is it of value?
7. Describe the method of growing different kinds of seeds of both hardwood and herbaceous plants, including special preparation of some kinds.
8. Under what circumstances is a soil mulch beneficial? What kind and how much will give best results?

INTERMEDIATE EXAMINATION (SYLLABUS No. 2).

PRACTICE OF HORTICULTURE.

(Time allowed—Three hours, including Special Subject).

NOTE.—THREE ONLY of the following questions are to be answered, including question 1 or 2; also THREE ONLY of the questions on the Special Subject nominated.

All questions are of equal value unless otherwise stated.

1. What instruments are used in drawing garden plans? Describe a suitable outfit; its use and care.
2. How would you proceed in surveying a half acre section of fairly level land and locating objects and buildings thereon, with a view to drawing a plan to scale?
3. What tools are used in a nursery or garden? Specify suitable brands, sizes and costs. Also give the main points in maintenance and care.

4. What is the weight of a cubic yard of loam? Describe the best method of selecting, curing and sterilizing the stocks of loam for potting.
5. Write a short essay on the culture of one of the following, including reference to varieties—Celery, Asparagus, Chrysanthemum, Cinerarias.
6. Poison baits, chemical sprays, and dusts are used to control fungous diseases and insect pests. Write a list of the more important specifics and the diseases and pests for which they are a standard remedy.

INTERMEDIATE EXAMINATION (SYLLABUS No. 2).

Special Subject.—TREES AND SHRUBS TOGETHER WITH THEIR PROPAGATION AND USE IN HORTICULTURE.

(Time allowed—Three Hours, including "Practice of Horticulture.")

NOTE.—THREE ONLY of the following questions are to be answered, also THREE ONLY from the paper on "Practice of Horticulture."

1. What precautions would you take in treating the seed from ripening fruit, and what practice would you adopt to ensure a successful germination of seed and growing-on of seedlings for the first year of the following:—

Holly, Horse Chestnut, Azalea mollis, Kowhai, Crab Apple and Arbutus.

2. Give the botanical, and where possible the popular name of what you consider six of the most ornamental conifers suitable for large specimen trees on a spacious lawn.
3. Describe the most economical method of propagating the following:—

Photenia arbutifolia, Betula alba pendula, Cytisus kewensis, Clematis Jackmanii, Erica Wilmoreana, Euonymus japonicus aureus.

Where grafting or budding is advocated the stock used and the time of operation recommended must be given. Likewise, where propagation by cuttings is recommended, the type of cutting, treatment, and time of taking must also be given.

4. What subjects would you recommend for planting permanent ornamental hedges in the following soils and positions:—
 - (a) Heavy soil inclined to water-log in the winter time.
 - (b) Good rich loamy soil always moderately moist.
 - (c) Well drained position inclined to become dry during mid-summer.
 - (d) Sandy soil near seaside and subject to saline winds.
 - (e) Average soil, exposed position, and subject to 15 degrees of frost in winter.

Such subjects as Cupressus macrocarpa and C. lawsoniana, used for large shelter hedges, are to be excluded. What precautions would you take to ensure the well-being of the hedge before and after planting, and what distance apart would you plant?

5. Give six hardy evergreens suitable for growing as specimen plants in tubs for the purpose of decorating or furnishing a large city building.
6. Give a list of indigenous shrubs and small trees that you would consider suitable for planting a shrubbery 12ft. x 120ft. General effectiveness to be the first consideration and prominence to be given to those subjects with conspicuous flowers.

INTERMEDIATE EXAMINATION (SYLLABUS No. 2).

Special Subject.—LANDSCAPE GARDENING.

(Time allowed—Three Hours, including "Practice of Horticulture.")

NOTE.—THREE ONLY of the following questions are to be answered, also THREE ONLY from the paper on "Practice of Horticulture."

All questions are of equal value unless otherwise stated.

1. What do you understand by "Natural" and what by "Architectural" styles of Landscape-gardening? Name classical examples of each.
2. You have to lay down a lawn: describe your proceedings under the following headings:—
 - (a) Preparation of the soil before sowing.
 - (b) The manure, if any, that you would use and the quantity for a given area.
 - (c) The seed or seeds that you would use and the quantity of each seed for a given area.
3. Discuss the kinds of Avenue trees you would choose for:—
 - (a) positions exposed to windy conditions,
 - (b) heavy and for light soils.
4. How would you proceed to form a drive-way that would be subjected to motor traffic? Use diagrams to illustrate your meaning.
5. Name and comment upon two books on Landscape-gardening that you have studied.
6. Write a short essay on water effect in Landscape Design.
7. Name trees or shrubs that, together, will give you a succession of flowers during the twelve months of the year.

DIPLOMA EXAMINATION (SYLLABUS No. 3).

PRINCIPLES AND PRACTICE OF HORTICULTURE.

(Time allowed—Three Hours).

NOTE.—SIX ONLY of the following questions are to be answered, including Question 1 or 2.

All questions are of equal value unless otherwise stated.

1. What instruments and materials are used in drawing garden plans? Describe a suitable outfit, its use and care.
2. How would you proceed in surveying a half acre section of fairly level land and locating objects and buildings thereon, with a view to drawing a plan to scale?
3. Describe in detail the most suitable method on farm or garden of composting organic material to form humus. What part does humus play in soil fertility? What are the effects of excessive applications and incorrect and incomplete composting?

4. Write a short essay on the preparation, arrangement and culture of ONE of the following, including a list of varieties—*Dahlia*, *Gladiolus*, *Iris*, *Narcissus*, *Rose*.
5. At what seasons may plants be propagated by means of cuttings? Describe the different methods and treatments, quoting examples.
6. When artificial fertilizers are not available, in what form may nitrogen, phosphates and potash be applied? Give advice regarding their use and the percentage of essential ingredient of each.
7. Pruning is done to control and direct growth; maintain vigour throughout normal life period; and, usually, to maintain fertility. How is this pruning done in the case of apple or peach tree or grape-vine?
8. Specify the main timbers and glass for a glasshouse of any particular kind.

DIPLOMA EXAMINATION (SYLLABUS No. 3).

Special Subject.—LANDSCAPE GARDENING.

(Time allowed—Three Hours).

NOTE.—SIX ONLY of the following questions are to be answered,
All questions are of equal value unless otherwise stated.

1. What do you understand by "Natural" and what by "Architectural" styles of Landscape-gardening? Name classical examples of each.
2. You have to lay down a lawn: describe your proceedings under the following headings:—
(a) Preparation of the soil before sowing.
(b) The manure, if any, that you would use and the quantity for a given area.
(c) The seed or seeds that you would use and the quantity of each for a given area.
3. Discuss the kinds of Avenue trees you would choose for:—
(a) positions exposed to windy conditions.
(b) heavy and for light soils.
4. How would you proceed to form a drive-way that would be subjected to motor traffic? Give diagrams to illustrate your meaning.
5. Name and comment upon two books on Landscape-gardening that you have studied.
6. Write a short essay on water effect in Landscape Design.
7. Name trees or shrubs that, together, will give you a succession of flowers during the twelve months of the year.

DIPLOMA EXAMINATION (SYLLABUS No. 3).

Special Subject.—VEGETABLE GARDENING.

(Time allowed—Three Hours).

NOTE.—SIX ONLY of the following questions are to be answered,
All questions are of equal value unless otherwise stated.

1. (a) How would you maintain soil fertility under a system of intensive cropping? (b) What is humus? and (c) What functions do humus, cover crops and lime fulfil in this regard?

2. A supply of Cabbages during the whole year is required. Name suitable varieties; describe methods of propagation, times of planting out and culture, including protection from disease and insect attacks.
3. Discuss the methods of Potato production in Canterbury and in Pukekohe.
4. Detail the operations involved and precautions to be taken in the production, for commercial purposes, of seeds of the following crops (a) Lettuce, (b) Cauliflowers and (c) Leeks? How long may they be expected to retain vitality.
5. Describe the symptoms of the following diseases of Tomatoes, with a special note on differences leading to correct diagnosis: Bacterial wilt, Fusarium wilt, Verticillium wilt and Spotted wilt. How would you protect a crop against the attack of Spotted wilt?
6. Describe the following diseases of Celery crops; state the causes of their incidence, and measures to be adopted for prevention of their occurrence:—Black heart, Root rot and Fusarium yellow.
7. What are the best chemical sprays for the protection of (a) Potatoes and (b) Tomatoes, from late blight (*Phytophthora*); and (c) Celery from late blight (*Septoria*)? Discuss the advantage or otherwise of including nicotine sulphate and arsenate of lead in the mixture.
8. Give the cost of production, on an acreage basis, of ANY TWO of the following crops:—Tomato, Cabbage, Celery.

INSTITUTE NOTES.

PERSONAL:—Lieutenant J. A. McPherson, Director of the Botanic Gardens, Christchurch, who was passing through to superintend Vegetable Production for New Zealand Servicemen in the Pacific Islands, was welcomed at the June Executive Meeting.

Other visitors to Wellington have been Mr. A. H. Shrubshall, Christchurch, an Honorary (N.Z.) Fellow and Mr. N. R. W. Thomas, Hon. Treasurer, Auckland District Council.

JOURNAL:—It was mentioned at a recent Executive Meeting that there was a great dearth of Journal Articles considering the number of members, who have the ability to write these. There have been practically no offers of articles over a term of many years.

MEMBERSHIP:—It was reported at the May Executive Meeting that Mr. George J. W. Cooper had enrolled six new members. This is particularly gratifying in view of the decrease in membership through war conditions.

CONDOLENCE from the Executive Council and the Examining Board has been conveyed to Mr. J. G. MacKenzie, Superintendent of Parks and Reserves, Wellington, on the loss of a son missing on air operations.

CHRISTCHURCH DOMAINS BOARD.—Annual Report of the Director for the year ended 31st March last was read and received. Among

interesting items mentioned were Children's Playground and Gift from Rotary Club, Cacti Collection—housing etc., Daffodil Sunday, Educational (Students and Children), etc. A motion of congratulation was conveyed to the Director personally.

DISTRICT COUNCILS:—Taranaki.—The President, Mr. J. C. McDowall, mentioned the difficulty, through restrictions, of resuming monthly meetings. It was stated that several Horticultural Societies in Wellington and neighbourhood continue to hold such meetings and that these are the most successful.

Canterbury:—A letter covering copies of the Syllabus in Horticulture under the auspices of the Institute, at the Christchurch Technical College was received at the May Executive Meeting. It is noteworthy that practically all the lecturers for the seven months session are Institute members. Congratulations had already been conveyed and the correspondence was later referred to the Examining Board when it was noted with keen appreciation.

South Canterbury:—It was noted at the May Executive Meeting that Mr. A. W. Anderson, Superintendent of Parks and Reserves, Timaru and Hon. Secretary of the local District Council, had resumed duty after discharge from camp.

Otago:—At the May Executive Meeting it was noted with thanks that Mr. D. Tannock, District Secretary of the Otago District Council, had arranged for the girls training at the Botanic Gardens, Dunedin, to attend classes in Botany at the local Technical College.

Southland:—Mr. K. I. Robertson, formerly Acting Hon. Secretary for the Southland District Council, has been promoted to the Headmastership of the Lawrence (Otago) District High School, and congratulations have been conveyed from the Executive Council with thanks for past services. Mr. G. A. R. Petrie N.D.H. (N.Z.), 122 Janet Street, Invercargill, has been appointed in his place.

DIG FOR VICTORY CAMPAIGN:—It was reported at the May Executive Meeting that the National Vegetable Committee (Mr. Ben Roberts M.P. Chairman) had held a meeting of representatives of interested bodies on the 11th May to discuss the principles and proposed details of a combined campaign for increased production of home-grown vegetables. The President and the Dominion Secretary are on the General Action Committee then set up. This Committee meets fortnightly and Public Meetings, with the Mayor in the Chair, have been held at Wellington and Lower Hutt and a deputation has visited Auckland for the same purpose. A comprehensive plan of advertising by radio etc. is in operation and all Annual Meetings of Horticultural Societies have been addressed. It is expected that the E.P.S. will contact every household in Wellington and Lower Hutt regarding the Campaign.

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2. Intermediate Certificate in Horticulture.
3. Diploma in Horticulture.
4. Seedsman's National Certificate.
5. National Certificate in Florists' Art.

Examination Papers

Sets of examination papers used at the last six examinations in horticulture are obtainable on application for sixpence per examination set. Address all correspondence to:

Dominion Secretary,
Royal N.Z. Institute of Horticulture,
Box 1237,
Wellington.



Dig For VICTORY

Vegetables & Food Production in Wartime

From reports from Great Britain and America it looks as though food supplies may again very largely win or lose the War. Beyond doubt, it will be one of the most important factors in the signing of Peace, and for a couple of years afterwards.

Well, you can scarcely starve any Nation which has plenty of well assorted vegetables, plus even a reduced quantity of meat, milk, butter and other foods.

They are the cheapest of all foods to produce and this can be done quickly by the people who need them; and without any freight being needed.

We are afraid that millions of human beings in Europe and Asia at this moment are dying of starvation and suffering from under-nourishment. Even in New Zealand and Australia, vegetables are scarce and dear and many people are not getting sufficient for normal needs,

Many vegetables such as carrots, parsnips, beet, turnips, swedes, pumpkins, marrows, can be produced at extremely low cost.

The great bulk of the expense of production and selling is for labour, rent, light, charges of all sorts. Practically the only cost that the home grower has is for manure and seed and these probably amount to less than 6d. to 1/- in the £. of produce grown.

Home grown vegetables are fresher. Every day that any vegetable (except dry skins such as potatoes, pumpkins, etc.) is picked, its value goes down considerably. It is by no means imagination that one's own vegetables are better.

Fortunately, New Zealand has a better supply of vegetable seeds than are available in England, U.S.A., Canada or Australia, and at lower prices.

Many of our men have gone to do a noble job of work for humanity. Someone must fill their place on the home front in the meantime. So already we have abundant reasons why we should do something to help ourselves and **"DIG FOR VICTORY."**

There is no need for panic or selfish buying, but order early!

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