

JOURNAL
OF THE
NEW ZEALAND INSTITUTE
OF
HORTICULTURE

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*Edited under the authority of the Executive Council
of the Institute.*

EXAMINATIONS.

Examinations for the following are conducted by the Institute:—

1. Junior Certificate in Horticulture.
2. Intermediate Certificate in Horticulture.
3. Diploma in Horticulture.
4. Second-class Certificate in Fruit-culture.
5. National Certificate in Fruit-culture.

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:
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N.Z. Institute of Horticulture,
Box 1237,
Wellington.



Evening Post Photo

Mrs H. R. Barraclough

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No. 1.

HINTS TO AMATEUR GARDENERS AND EXHIBITORS

BY G. S. NICOLL.

An attempt is made in this article to set down hints and labour-saving devices which may be found useful to other amateur growers and exhibitors. After a fairly lengthy term of flower gardening and exhibiting, the writer feels that he would like to pass on some of his methods, in the hope that they may be found interesting and perhaps useful. An endeavour is made to leave the beaten track of articles dealing solely with particular flowers. Naturally, when several subjects are dealt with in one article, it is not so easy for the reader to follow, but the writer trusts that what he has in mind has been made sufficiently clear.

PREPARATION AND PLANTING: A plot which is not shaded from the sun by buildings, trees or overhanging limbs has the ideal situation. Where it is not possible to get rid of trees, sheet iron buried on edge three feet down on the boundary of the plot next to the trees, is worth trying. The soil should be dug all over to a depth of at least two feet—two feet six is better—keeping the different layers of soil in their original position. This operation is known as bastard trenching. For sweet peas it is better to thus dig the whole area rather than to take out deep trenches, which only serve as natural drains for surface water in a wet season. Due regard must be given to drainage, which is most essential for all plants. In planting roses, dahlias and chrysanthemums, a good gauge of the size of the hole is the square of a spade with the corners rounded by a shovel, with a depth of from 15 to 18 inches. A piece of flat iron can be used as a standard to measure the distance between the holes and there is no chance of its being mislaid. Firm planting is essential but leave the top six inches loose. In transplanting sweet peas, dig a hole with a trowel the full depth of the roots and gradually cave in the sides using the handle of the trowel for firming the soil around the stem.

SEEDS AND PLANTS: It is proposed to give only a few hints under this heading from the writer's own experience, particularly with sweet peas. Results from ordinary garden soil were not encouraging, so recourse was made to a heap of street cleanings containing a little rough turf, sandy grit, plenty of weeds and numerous insects. Holes were bored in the bottoms of the seed boxes which were crooked and filled from the rubbish heap. Hot water settled the weeds and the insects, and the boxes were stood in shallow water

overnight and left to drain in the morning. When the soil was sufficiently drained, but still retained enough moisture, holes were made with a lead pencil, marked at one inch, and the seed dropped in and covered by pressure. White and mottled seeds were sown near the surface with silver sand below and above. All boxes were covered with sand, the names being written on the boxes with lumber crayon. The boxes were then placed on the roof of a lean-to, with wire netting over the lot and protection from the southerly. The boxes had a maximum of heat and protection from birds and slugs. No weeds appeared and the plants were splendid. The same practice was found successful with other seeds and sand was found to be an excellent mulch, even if only sprinkled direct on fine seeds. The small sturdy shoots of chrysanthemums, pansies, etc., taken well out from the plants, with a few root hairs, have been found to make the best plants.

STAKES AND SUPPORTS: A good supply of garden stakes is most essential and they must be of lengths, varying every six inches, from two feet up to at least five or even six feet. It is a good plan to build a rack in a basement or shed, with the different lengths marked, into which the stakes can be sorted when not in use. It is also helpful to keep handy a six-foot lath, one inch by a quarter, marked every six inches from two feet up to six feet. If stakes are required in any quantity at covering time you can go through a bed with this and jot down the different sizes required from your rack. In planting dahlias, it is a good plan to put a strong stake in the centre of the hole before planting the cutting or tuber. To keep a rose plant from moving in the wind, a short stake can be placed at an angle of 45 degrees against the main stem, just above ground level, or two, if found necessary. This will keep the stem steady and is less unsightly than an upright stake. Hardwood stakes are generally used one inch square and in varying lengths. Where numbers of stakes are required, as in covering biocms, dry flax sticks are useful. They last quite a while as they are only in the ground for a brief period and are then stored. In growing sweet peas for exhibition, the writer has found that the previous years toitoi sticks are ideal for training stems and excellent for tying to. The almost universal practice by exhibitors of layering their sweet pea plants has made the question of supports for these much easier.

TYING: Whilst raffia is very useful for most tying purposes, soft tape is better for holding a rose bloom, etc. in position for covering. For sweet peas, after the first two or three ties, use galvanised wire split rings which are quite as effective and much quicker to use. Take a broom handle with a hole in it, push one end of your length of fairly fine wire through a hole at the top of the handle and tie the other end to a post or tree and then walk towards it, winding the wire round the broom handle. This gives you a long spring of wire. Push this together and slip it off, then cut into rings with a pliers. These rings are also excellent, in place of string, for affixing labels to plants.

WATERING AND CULTIVATION: It is said that the hoe is better than the hose but the writer prefers a lady's fork, with long handle, to the former. Always fork before you water and about three days after to keep the soil from caking. The same process, of course, applies after rain. Roses, unless in a very dry situation, do not require water until liquid-feeding time when they should receive it weekly before feeding. Dahlias require a good soaking at least twice a week. The watering of sweet peas can easily be overdone. After transplanting these, never water unless the soil is very dry. This can only be ascertained by scraping down two or three inches, as the appearance of the surface soil is not a correct indication. Over-watering of chrysanthemums produces sappy and lanky growth, whereas ripened and sturdy wood is required for the production of exhibition blooms. A good mulch in a hot summer is old turf through which you can water and it is easy to move should you want to cultivate and feed.

As already stated, a lady's fork is an excellent cultivator, and it can be used with one hand. A hoe, pointed at each end, is equally effective but requires care, otherwise damage will be done. The fork is the best for sweet peas, but be careful when you are near the roots. A stabbing action is better then, otherwise you may kill plants. Cultivate all plants on regular days once a week—twice is better. For pansies, a sharp stick is to be preferred, and fingers when narcissi are not through the ground. A glove, with metal points on the finger ends, is advertised, and should be useful for weeding. Pansies like new soil added, and, if it is not possible to shift rose trees which require such action, take away some of the old soil to a depth of a few inches and add new.

FEEDING: It is impossible to give hard and fast directions for liquid feeding, as so much depends on the nature of the soil, season, and the condition of the plants. Once a week is often enough to give liquid food, and it is advisable to continue on the same day of the week. Always water, after forking, before giving liquid food, whether animal or artificial. Animal manure, whether cow or sheep or equal parts of both, should be placed in a weighted sugar bag in a barrel filled with water and left for several days and diluted for use until it looks like weak tea. Soot can also be immersed in the same way and diluted in the same manner and mixed with the liquid animal manure. As a change of diet, plants may be given diluted artificial fertilizers. By the way, if you can have two or three barrels in different parts of your garden and several taps, it saves a lot of carrying. Liquid feeding can be started as soon as flower buds appear and continued weekly, but feeding and watering should stop about ten days before the Show. Where plants are not grown in defined rows, as in a circular bed, mark the bed out in sections, before feeding, with light bamboos laid across. By this method no plants will be missed. Liquid artificial manures should not touch the foliage. Sometimes it is impossible, in close bedding, to avoid this, but immediate spraying with the rose of a water-can or hose, after feeding, will prevent damage.

PESTS: Mildew on roses, chrysanthemums, sweet peas, pansies, etc. can be controlled with Liquid Sulphur, one ounce to six gallons of water. A good dusting of flowers of sulphur is beneficial after the first crop of roses. Wood ashes in the soil are largely used in Australia as a preventive of this pest. Liquid Sulphur or Bordeaux Mixture is a good control for Black Spot, but I find that the gathering and burning of all affected leaves, whether on plants or ground, and dusting with flowers of sulphur is quite a good preventive. Caterpillars and Aphis can be kept in check by regular squeezing of the affected leaves (and looking afterwards), in the case of the former, and the assistance to the fingers of a camel-hair brush for the latter. Hold shoot with left thumb and first finger and brush aphis into same palm and destroy. A spray can be used, but as you have to look for caterpillars, disbud, etc., it is just as easy to carry out the several operations at the one time. The best time to look for aphis is when the early morning sun commences to warm up the plants. Make it a rule to go round your plants regularly, not at spasmodic intervals.

COVERING: Unfortunately, it is not possible to grow exhibition blooms without some form of covering, but sweet peas that burn, such as orange and salmon, do quite well on the shady side of a double row. Red roses are not improved by covering, except from bad weather just before a Show. Half benzine-tins cut from corner to corner, the long way, are excellent as covers for roses, chrysanthemums and even dahlias, but, in the case of the latter, only for about three or four days before a show. A stake inside at each end, of fair width, will hold the half tin securely, but holes at the bottom of the tin on each side of the stake, and ties with tape, will keep the tin rigid in the worst wind. Covered wire frames secured to stakes are less unsightly. Excellent covers for dahlias and narcissi are clean benzine cases cut down to about three inches in depth—three stakes should be sufficient. A good cover for exhibition pansies is to have several frames, with wire netting tops, to fit your beds, over which some covering material can be placed.

STAGING: Show schedules should specify the height of vases for the main flower or flowers in each show, otherwise the display is not uniform and the experienced exhibitor may obtain an undue advantage through the use of eight inch vases against six. Sweet peas have been seen, shown in an exhibitor's ten inch vases, against equally good flowers in six inch vases! Roses in eight inch vases dwarf those in six inch, hence the necessity for a standard vase for each main flower in a show. Before unpacking your flowers, find out where you are going to stage and reserve that space. You should know the number of vases required, and should immediately secure that number and see that they are perfectly clean on the outside. Water is the next requisite, but do not fill your vases right up. Now you can unpack and place your blooms in the vases. Use wet sphagnum for packing round the blooms, and make your blooms look at the judge. Roses should be shown on long stems with their

own foliage, as cut from the plant. Chrysanthemums are better without foliage, and the tops of the blooms should be level. The bottom of a gladiolus stem should be cut on the slant to allow the stem to take up a maximum of water. Sweet peas can be staged excellently by the use of packed moss, but the flowers should all look at the judge. The best spikes should be placed in the most prominent position, and you should try and make the judge look at flowers and not at stems. Watch the colour effect of your exhibit. With roses, chrysanthemums, etc., place your worst blooms in front and the larger ones at the back so as to preserve the proportion. Distance does not lend enchantment to the view, in the case of a poor bloom. Undue dressing should lose points in judging, but judicious dressing, by an experienced exhibitor, gains them. The novice should experiment at home, not at a show, as he will probably only alter the natural form of a flower. If a daffodil is cupped in one hand the perianth segments can be smoothed with a finger of the other. Before staging, count your blooms with the schedule and see that your tickets agree with the schedule class numbers.

LABOUR-SAVING DEVICES: Always carry a pair of secateurs and some raffia for tying. The former has many uses besides the actual pruning of roses, etc. Have you tried a sickle on a hedge instead of hedge-shears? It makes just as good a job, with slight practice, and saves a great amount of time. If your hedge is a shelter one, and therefore of good height, nail a wider piece of three-ply or light board across the top of your step ladder and you will not fall through or damage the hedge, and you can cut the top in safety. If it is a hedge with heavy woody growths on top, and you find a difficulty with the sickle, try the secateurs instead of the notch in the hedge shears. You can hold and cut a handful of woody growths, instead of singly, as with the notch. With some low growing flowers, dirt is splashed on to the blooms by rain. Lawn cuttings alongside the plants will stop this. A bed of hyacinths, with the soil covered with lawn cuttings, is not less beautiful. Your flowers will remain clean and slugs and snails will show up well when sought with a torch at night. For shifting turf or heaps of weeds a stone fork (ten tines) is an excellent time saver. A scythe for long grass, sharpened with a carborundum stone, and a good big sheet, will quickly leave you a clean sward. When pruning roses, keep a large box or basket handy, and make a heap of your prunings beside your incinerator, which can be easily made from a large benzine drum. Frost on young rose shoots or buds, Cinerarias and other tender plants, should be washed off with a spray or rose, on a hose or watering-can, before the sun is on the plot. A shed or two round the place is handy for tools, stakes, covers, etc. You can obtain a special broom for sweeping leaves off lawns, gravel paths, etc. Backyards and concrete paths can be quickly swept with a two foot broom. If fencing wire is used as a handle for a benzine tin, try twisting the centre, where the hand grips, into spirals. You will be surprised at the difference in the comfort, when carrying the tin.

THE GLADIOLUS AND ITS CULTIVATION.

BY W. R. GRIFFITHS.

The gladiolus has risen from comparative obscurity to an eminent position in three continents. Societies have been established in its interests and it possesses a host of admirers, continually increasing in number. This is the enviable place of the gladiolus to-day and the reasons for its popularity are obvious. The glorious beauty of the flower itself, its rapid and continuous improvement in the hands of plant breeders, its delicacy, brilliancy, and variety of colour, are such that no other species of flowering bulb can compare. Size of flower and length of spike have also increased greatly and many modern varieties will come as a revelation. Furthermore, the corms may be held in storage for months after the natural growing season begins. Thus the grower is enabled to plant at intervals, so extending the flowering season over two or three months, or he may plant later in order that flowering may take place when conditions are likely to be more favourable.

SITUATION: Under most climatic conditions the gladiolus shows a dislike to shade and, in New Zealand, it is found that a position fully open to the sun gives the best results. Owing to the possibility of injury to buds and flowers, through excessive heat at flowering time, there is a temptation to plant in shady places, but it is better to give full sunshine and to provide, if necessary, a light shade, such as scrim overhead or moveable shades on stakes. Half benzine tins cut diagonally are recommended. Beds in the open composed of plots 7 ft. by 3 ft., boarded and raised about 3 or 4 inches, are ideal for exhibitors.

SOIL: A soil naturally rich and deep is to be preferred but the gladiolus is not over particular. It can be grown successfully in soils, varying from light sandy to heavy clay. Owing to the vast difference in soils and in materials available, the question of manuring must be settled by each grower for himself, preferably by experiment. With the assistance of an abundant supply of rich natural manures in the soil and on the surface, and plenty of water, giant flowers and spikes may be obtained. The usual result, however, is that the corms are more susceptible to disease. The best modern practice, however, tends more and more towards the avoidance of rich manures or of decayed vegetable matter, where it is found that the gladioli can succeed without their aid. Rich virgin soil, or a bed which has previously been manured well, needs no further manurial assistance. Whenever manure is used, it should be well rotted and the corm should be surrounded with a handful of sand when planting, to prevent contact with the manure. This will result in a clean corm, when lifting, and it will also assist in the prevention of disease. No other artificial manure than superphosphate should be used—one ounce to the square yard.

TIME OF PLANTING: Obviously, this will vary greatly according to climate and other factors. The length of time between planting

and blooming will also differ according to climate, weather, date of planting and the varieties planted. Local knowledge is necessary but the following may be a rough guide. The time generally taken from the first development of the bud to the showing of colour is eleven days and eight days from then to cutting, i.e. from nineteen to twenty one days from bud stage to full flower. A growth of two or three inches before planting will not injure the corm if it is carefully planted. These shoots are liable to be attacked by *Aphis* (green-fly) and should be examined during storage. The husk (dry skin) may be removed before planting. When planting late, it is wise to carry out this practice.

PLANTING: The soil, and especially the sub-soil, should be moist at planting time but not sodden. Plant full size corms three or four inches deep, further down on light soil, and not so deep in moist heavy soils. Smaller corms should not be planted so deep. Plant in any desired formation, singly, in clumps of three or more, or in rows, the corms at least six inches apart and from fifteen to twenty four inches between the rows. Successful exhibitors advise planting twelve inches apart. It is certain that the more space given, within reason, the better the result. The amount of space must, however, be governed, to some extent, by the ground available.

STAKING: The plant should be given support, when about twelve inches high, by placing a short stake across the plant with a secure tie. This should be followed later with a larger stake up to five or six feet. As the spike grows, follow it up the stake with raffia ties. This will keep the stem quite rigid, a condition which is very necessary for good exhibition spikes. Always make sure that the stake is higher than the spike. It is a well known fact, based on the experience of successful exhibitors, that most of their prize awards are won through carrying out the instructions detailed above and this information is therefore most valuable.

WATERING AND CULTIVATION: In respect of watering also, no definite rule can be laid down. Some experienced growers, in dry localities, advise giving as much water as the plants will take, provided soil cultivation follows each application. Others in different situations, obtain excellent results by relying on the rainfall and plenty of soil stirring. However, in most places, artificial watering will be necessary at some stage. A thorough soaking of the soil and sub-soil occasionally during dry weather followed, as soon as the soil is workable, by cultivation to a depth of two or three inches, is far better practice than much surface-watering and little cultivation. Constant soil tillage, especially in soil which is apt to set hard around the stems, is an important item in gladiolus culture and one of the best safeguards against disease.

DISEASE: If the foliage of an odd corm begins prematurely to turn yellow or brown from the base and if the stem, below the surface, is found, on examination, to have a scalded appearance, usually in patches, the plant has contracted the only ailment likely to cause annoyance to the gladiolus grower. The trouble is probably

as old as the gladiolus itself, yet little is known of this disease, except that it travels slowly through the soil, from corm to corm, if conditions are favourable. It is therefore advisable to remove any infected corm, together with the soil immediately surrounding it, as soon as such condition is ascertained. Cut off and burn the foliage or destroy the corm also if it is of little value. Otherwise, the corm may be placed away to dry and, if planted separately and given dry conditions next season, it will probably produce a perfectly healthy corm. Occasional losses, from the above cause, may be expected but they are generally not serious enough to diminish the popularity of the gladiolus. Such losses may easily be more than made good by planting each year, or every alternate year, a few of the tiny cornets usually found adhering to the corms, when lifted.

LIFTING THE CORMS: As soon, after flowering, as the corm has attained its full size, and before the foliage has turned yellow, is the correct time for lifting. On no account, must the corms be left in the ground all the year and not even until the foliage has died. The time to be allowed, after flowering, for corm development will also vary. During dry weather, if the foliage still keeps green, eight or nine weeks may not be too much, but generally from four to six weeks will be sufficient. After lifting, the tops should be cut off, close to the corms, or the corms should be hung up, under shelter, to dry. They should be left for a few weeks, then the old corms and roots should be removed and the new corms should be stored in a cool dry place until next planting time.

LIST OF NEWER VARIETIES FIT FOR EXHIBITION:

- Avignon. A sport from Mrs. S. A. Errey; growth and spike identical; colour, silvery pink with plum blotch.
 Chasseur. Rosy salmon crimson blotch, with vivid crimson stripe.
 Gabriel. Grey and salmon crimson; salmon centre, powdered yellow.
 Betty Nuthall. Glowing orange pink, pale yellow throat markings.
 Cicero. Crimson flecked dark chocolate.
 Lisbeth. Pale flesh pink petals, flecked salmon; orange buff throat.
 Jessie. Pink flecked rose; large white blotch.
 Morongo. Bright salmon yellow; scarlet centre.
 Waratah. Brilliant orange scarlet; centre crimson touched with cream.

PRIMULINUS: These are divided into two classes, the *Primulinus grandiflora* and the *Primulinus hybrid*. The first named is of the large type, bearing bells nearly as large as the large flowered Gladioli, but the hybrids are the more graceful and lend themselves, with their wonderful colours, to the artistic side of Gladioli showing, being wonderfully effective in basket-work displays. The Ruffle type of Gladioli is not used much for exhibition. One variety only is outstanding and worth having on account of its beautiful colouring and its very sturdy growth, namely, Purple Glory, maroon or purple, with darker centre.

PLANT REGISTRATION

LEE'S RED SPORT APPLE, RAISED BY MR. GEORGE LEE,
TEMPLETON, CANTERBURY.

Raiser's Description:—"A shoot from a Delicious tree. The tree was destroyed by hares and a new shoot came from the stump. This is the Sport. I am enclosing three apples which show the Delicious points but you will see this sport is practically all red. I am enclosing a photo of one of the two-year-grafted trees. At two years, this particular tree bore 40 pounds.

The fruit is ready to pick before the ordinary Delicious and is a better keeper and those who have eaten the fruit say it is an improvement on the ordinary Delicious and a much better cropper."

STRAWBERRY "DELICATESSEN," RAISED BY ARTHUR G. SAINSBURY,
MANGERE, VIA OTAHUHU.

Raiser's Description:—"Parentage unknown, found on my testing beds of seedlings, of European origin.

"Leaf stem rather short, strong, light green, upper side reddening with age; often with pair of large bracts; moderately haired at right angles. Stipules fairly large, green, tinged with pink of somewhat lighter tint than Royal Sovereign. Leaves bolder than in Royal Sovereign, more compact, of strong texture; light green darkening with age. Leaf surface generally of distinct convex forms. Leaflets roundish; serrations blunt, fairly numerous. Stelons strong, dark red, with faint green line beneath.

"Plant robust, compact, well balanced; appears strongly resistant to leaf blight, virus, etc., of only moderate spread, lending itself well to commercial cultivation. FLOWERS of moderate size, bi-sexual. Fruit ripe, end of October; large to very large, borne in great numbers, of conic to wedge shape. Surface bright crimson. Flesh a glorious dark crimson all through. Flavour superfine; very rich, refreshing, and sweet. The large quantity of dark red luscious juice yielded on bruising is characteristic, and suggests its special value for sundaes and the strawberry and cream trade and delicatessen use generally. The high flavour is maintained despite dull weather. The fruit stems are moderately short and borne on short stemmed clusters. Fruiting extends to midsummer and a further crop follows in the autumn. Likely to be a most valuable market variety. Suited to culture under glass owing to its free bearing, rich quality, vigour, and compactness."

NEW ZEALAND INSTITUTE OF HORTICULTURE

REPORT OF THE EXECUTIVE COUNCIL FOR THE YEAR ENDED
31ST MARCH, 1933.

In its eleventh year the Institute continues to record steady progress in spite of economic conditions.

EDUCATION.—This phase of the Institute's activities is fully dealt with in the report of the Examining Board, to whose members and examiners the thanks of the Executive Council are due for their valuable assistance and the excellent manner in which their work has been carried out in an honorary capacity.

JOURNAL.—Although considerations of finance still restrict the Journal to two issues yearly it constitutes a valuable link with members, in keeping them advised of the Institute's activities and in supplying horticultural and educational information. The hearty thanks of the Executive are again extended to the Editor (Mr. W. R. B. Oliver), his Committee, and to contributors for their valued assistance.

LODER CUP.—The fourth competition was held at the National Flower Show, at Wellington, in January 1933 and was won by Messrs. T. Waugh and Son of Lower Hutt.

NOMENCLATURE BOARD.—The desirability of legislation by amendment of the Institute's Act, for the establishment of a statutory Nomenclature Board, has been recommended to the Hon. Minister of Agriculture and it is hoped that this matter will receive favourable consideration during next session of Parliament.

CITRUS RESEARCH.—Research work in conjunction with the Department of Scientific and Industrial Research has been continued during the year. The Auckland Citrus Committee of the Institute has carried out excellent work in securing the purchase by the Auckland Savings Bank, of twenty acres of land at Mount Albert, Auckland, as a test area for citrus and in obtaining the co-operation of the adjacent Mount Albert School in the adoption of an Agricultural Course with a view to co-operation in working this test area. The thanks of the Institute are due to the Auckland Savings Bank for its generous gift, to Miss A. Kerr-Taylor and her family, to the Auckland Grammar School Headmaster and Board of Governors and to its Auckland Citrus Committee and notably its energetic Secretary, Mr. N. R. W. Thomas.

PRESERVATION OF NATIVE BUSH.—Protests by the New Zealand Forestry League and the Institute regarding the leasing of small areas on the shores of Lake Waikaremoana for the erection of cottages for the accommodation of anglers and deer stalkers resulted in assurances that the Department concerned did not propose to lease any area for such purpose.

Opotiki-Gisborne Road (Waioeka Gorge).—Representations for the preservation of practically the whole area of native bush in this vicinity were agreed to.

The New Zealand Forestry League requested the Institute to support the following resolution passed by its Council:

“That in view of the past disastrous experience in connection with the introduction into New Zealand of birds and animals other than domestic, the Government be urged to absolutely prohibit any further importation.”

This was agreed to and duly communicated to the Minister of Internal Affairs from whom a reassuring reply was received.

WAIPOUA KAURI FOREST.—Representations have been made to the Commissioner of State Forests regarding the preservation of this unique National asset and an interesting address was delivered to the Executive Council by a technical forestry officer. The Auckland District Council has taken a keen interest in this matter.

NATIONAL CONFERENCE ON HORTICULTURE.—This Conference was held at Wellington in January, 1933 and was participated in by the following bodies: (a) The New Zealand Horticultural Trades Association, (b) Horticultural Seedsmen's Association of New Zealand, (c) Association of Directors of Parks and Reserves and (d) The New Zealand Institute of Horticulture. After the annual meeting of these bodies they, together with the Hutt Valley and Wellington Horticultural Societies, held the third National Flower Show in the Wellington Town Hall and Concert Chamber, etc. The next National Conference on Horticulture is to be held at Palmerston North in January 1934. The “national” bodies concerned and the Palmerston North Horticultural Society have arrangements well forward.

AWARDS OF MERIT.—The Institute has now its own Awards of Merit several of which were granted at the last National Flower Show.

DAFFODIL REGISTRATION.—A satisfactory agreement with the National Daffodil Society was reached during the year in a most

amicable manner. The National Daffodil Society is now affiliated with the Institute and is the recognized registering authority for daffodil names and all registrations are being forwarded to the Royal Horticultural Society through the Institute. Both bodies are pleased to have secured such a happy termination.

NATIONAL FLOWER SOCIETIES.—An agreement was reached at the Wellington Conference (1933) that the formation of "national flower societies" (by the Institute) should be determined only by the Annual Conference of the Institute or by the Executive Council, in the latter case only after submission to District Councils. The Conference also decided that the Institute should take steps to assist in the formation of a National Rose Society.

VEGETABLE GROWING.—The Institute, with the other interests concerned, actively assisted the Government in its scheme for vegetable growing by the unemployed.

STONE, A. R.—It is fitting to record herein the severe loss sustained by the Institute in the loss of its highly esteemed and most capable Secretary, Mr. A. R. Stone, whose services have been greatly missed.

CONGRATULATIONS.—The hearty congratulations of the Institute were extended to Dr. L. Cockayne, C.M.G. on his appointment as a member of the Committee on Botanical Nomenclature of the International Botanical Congress.

(For Annual Accounts see pages 26, 27 and 28.)

REPORT OF EXAMINING BOARD FOR THE YEAR ENDED 31ST MARCH, 1933.

CLASSES FOR STUDENTS.—Technical College horticultural classes are in operation in Auckland, Christchurch, Dunedin and Invercargill. In Wellington the Workers' Educational Classes were held in the winter as in the past.

EXAMINATION PAPERS.—The written papers set at the Institute Examinations are still being published in the Journal, and separates of these covering several examinations can be purchased by students desirous of having this assistance in their examination studies.

EXAMINATION SYLLABUS.—Good progress has been made with a complete amendment of this which it is hoped to finalize during the coming year. Dr. D. Miller of the Cawthron Institute has written, at the request of the Board and to meet the requirements of the syllabus, a work on "Horticultural Zoology in New Zealand." This is being published monthly in the "New Zealand Smallholder," the first issue appearing in September, 1932.

EXAMINATIONS IN FRUIT-CULTURE.—During the year the Institute has been in touch with prospective examiners, i.e. Orchard Instructors and Fruit-growers for the oral and practical portions of these examinations and the response has been most gratifying as practically all those approached have accepted appointment. The written examinations will, of course, be set by the Institute as in the case of its other examinations. A short article was inserted in "The Orchardist" advising that the scheme is well under way and that forms of application for enrolment and examination could be obtained from the Dominion Secretary. Orchard Instructors have been advised, through the Director of Horticulture, that the machinery for these examinations has been completed and that this scheme should be introduced in fruit districts and pushed privately and publicly at any meetings.

YEARLY EXAMINATIONS.—The Executive Council adopted the recommendation of the Board that future examinations should be held yearly in November instead of half yearly. This new practice is in accordance with that of practically all educational institutions, quite apart from the saving of extra work entailed on voluntary examiners and other helpers.

EXAMINATIONS.—The following is a summary of the results of the June and November 1932 examinations:—

EXAMINATIONS	COMPLETE PASS.	PARTIAL PASS.	FAILURE.
Preliminary	3	1	—
Intermediate	2	—	—
Diploma	1	—	—

DIPLOMAS AND CERTIFICATES ISSUED.—Appended to this report is a list of Diplomas and Certificates issued, after examination, in addition to those shown in previous annual reports:—

				TOTAL.
Diploma in Horticulture	..	..	..	1
Senior Certificate in Horticulture		..	..	2
Junior Certificate in Horticulture		..	..	3
				—
				6
TOTAL ISSUED TO DATE.				TOTAL.
Diploma: Without Examination	..	..	..	170
Group C. Examination		..	..	26
Group B. Examination		..	..	9
Equivalent	..	..	..	1
Certificates: Junior	..	..	..	13
Senior	..	..	..	9
				—
				228

List of Diplomas and Certificates granted under Section 4 of the New Zealand Institute of Horticulture Act, 1927, since the issue of the 1931-1932 annual report.

DIPLOMA IN HORTICULTURE.

Hunter, James Anderson; Auckland.

SENIOR CERTIFICATE IN HORTICULTURE.

Thomas (Miss), Elizabeth Barnhill; Christchurch.
McEwan, Alexander McKenzie; Dunedin.

JUNIOR CERTIFICATE IN HORTICULTURE.

Williams (Miss), Catherine Gretchen; Dunedin.
Watters, William Smith; Auckland.
Lannie, Lawrence; Wellington.

THANKS.—The Board again records its thanks to Messrs. A. H. Cockayne and P. Black for preparing the written tests and marking the examination papers and also to the examiners who conducted the oral, practical and written tests in the four centres. All the foregoing services are rendered in an honorary capacity for which the Board is deeply grateful.

NEW ZEALAND INSTITUTE OF HORTICULTURE

SCHEME OF EXAMINATION OF CANDIDATES FOR THE CERTIFICATES AND DIPLOMA OF THE NEW ZEALAND INSTITUTE OF HORTICULTURE.

(As recommended by the Institute's Examining Board on 27/6/33,
and approved by the Institute's Executive Council on 28/6/33).

For the purpose of this scheme, unless the context otherwise requires:—

“Act” means the Institute of Horticulture Act, 1927.

“Approved garden” means any botanic, municipal, nursery, or private garden approved by the Examining Board.

“Certificate” means either of the Certificates in Horticulture granted by the Institute.

“Diploma” means the Diploma in Horticulture granted by the Institute.

“Examining Board” means a committee set up by the Institute for the purpose of controlling all matters relative to examinations under the Act.

1. CERTIFICATES AND DIPLOMA.

The Institute issues the following certificates and diploma, in respect of each of which, there is a specified course of training and an examination:—

The Junior Certificate in Horticulture.

The Intermediate Certificate in Horticulture.

The Diploma in Horticulture, to be known as the National Diploma in Horticulture, New Zealand—N.D.H. (N.Z.).

2. EXAMINATIONS.

Each examination shall include written, oral, and practical tests, and the oral and practical tests shall be regarded as the more important.

In the event of a candidate failing to pass any examination, he may submit himself for re-examination at such time and in such subjects as the Examining Board may direct.

All examinations shall be held at such time and place as is decided upon by the Board.

3. TRAINING AND EXAMINATION FOR THE JUNIOR CERTIFICATE.

A student shall, at the commencement of his course, register his name with the Institute, and at the same time furnish evidence of his having passed the State School Proficiency Examination or its equivalent, and of his ability to write good English.

Before being eligible to sit for the Junior Examination, the student must serve two years in an approved garden, during which period he shall keep and submit annually, (and at such other times as may be required) for the approval of the Examining Board, a

diary describing his horticultural experience; and noting what he has observed in neighbouring gardens or elsewhere with regard to natural and introduced vegetation; and also describing the horticultural shows he has attended. If his diary is not considered satisfactory, the qualifying period shall be extended for such further term as the Examining Board may decide.

At the completion of the qualifying period, and provided his diary has been approved, the candidate may present himself for the Junior Examination (hitherto known as the Preliminary Examination), and he shall be examined in the subjects enumerated in Syllabus No. 1 hereunder, the passing of which examination shall entitle him to the Junior Certificate in Horticulture.

Notwithstanding anything hereinbefore provided, the Examining Board may, in special cases where it considers there are good and sufficient reasons for so doing, permit a student, after one of the two years of practical training prescribed, to present himself for the theoretical portion of the examination for the Junior Certificate; but the oral and practical parts of the Examination may not be taken until the completion of the two years of practical work prescribed.

SYLLABUS No. 1.

JUNIOR EXAMINATION: Open only to candidates who have complied with the foregoing conditions, and have been approved by the Examining Board.

GENERAL EXPERIMENTAL SCIENCE, CHEMISTRY AND AGRICULTURE.—Any two of these subjects as they are prescribed for the Intermediate Examination conducted by the Education Department. The Examining Board may, for the purposes of this paragraph, recognise equivalent examinations.

HORTICULTURAL BOTANY.—The organs of flowering-plants and modifications of those organs (stem, root, leaf, flower, fruit, seed)—their form, structure and uses. Elementary plant-physiology, including growth, respiration, absorption, photo-synthesis, food, nutrition generally, and waste products. Reasons for bringing about partial sterilization of the soil to increase its fertility, and the means ordinarily adopted to this end. The elements of plant breeding.

GENERAL PRINCIPLES OF CLASSIFICATION.—The divisions of the plant kingdom with special reference to fungi, ferns, and flowering plants. Elementary knowledge of the commoner families of flowering-plants met with in horticulture, especially Coniferae, Gramineae,

Amaryllidaceae, Liliaceae, Orchidaceae, Iridaceae, Caryophyllaceae, Ranunculaceae, Cruciferae, Geraniaceae, Saxifragaceae, Rosaceae, Leguminosae, Cucurbitaceae, Myrtaceae, Umbelliferae, Primulaceae, Convolvulaceae, Solanaceae, Scrophulariaceae, Boraginaceae, Labiatae, Gentianaceae, Campanulaceae, Compositae; and the recognition of the more important genera of the above cultivated in gardens.

PRINCIPLES OF PLANT PROTECTION.—A general knowledge of the morphology and life-history of an aphid, a beetle, an earwig, an earth worm, an eel-worm, a housefly, a moth, a scale insect, a mite and a woodlouse. A general knowledge of the morphology and life-history of a bacterium, a downy mildew, a powdery-mildew, a mould, a polypore, and an agaric. The methods of preparation, strengths, and times of application of sprays in general use, including bordeaux mixture, burgundy mixture, lead arsenate, lime-sulphur, nicotine, oil, and sulphur. Methods of treating the soil by steam or by chemical substances to guard against fungous and insect or other animal pests; glasshouse sterilization and fumigation; seed and bulb disinfection by chemicals and by hot water treatment. Significance of pest and disease control by hygiene, elimination of weeds, crop-rotation, and cultural methods. Effects of temperature, humidity, and soil moisture on pest and disease control in glasshouses.

4. TRAINING AND EXAMINATION FOR INTERMEDIATE CERTIFICATE.

Before being eligible to sit for the Intermediate Examination, the candidate must pass the Junior Examination, and thereafter serve a period of two years in an approved garden. During such further period he shall continue to keep and submit for the approval of the Examining Board, a diary as hereinbefore provided. If his diary is not considered satisfactory, the qualifying period shall be extended for such further term as the Examining Board may decide.

At the completion of the qualifying period referred to in the preceding paragraph, and providing his diary has been approved, the candidate may submit himself for the Intermediate Examination, and shall be examined in the subjects defined in Syllabus No. 2 hereunder, the passing of which examination shall entitle him to the Intermediate Certificate in Horticulture (hitherto known as the Senior Certificate).

SYLLABUS No. 2.

INTERMEDIATE EXAMINATION: Open only to candidates who have passed the Junior Examination and otherwise complied with the foregoing conditions.

SECTION I.

PRINCIPLES OF HORTICULTURE.—The origin, classification, chemical composition, principal physical properties (e.g. water-holding power, heat absorbing power, porosity, and capillarity), and biology of soils. The relation of heat, light, moisture, and wind to the growth of plants. The various kinds of manures, and the special properties of each; the scientific basis of manuring, the economics of manuring. The scientific meaning of the various gardening operations (e.g. digging—including trenching—watering, hoeing, and mulching). The general principles underlying the different methods of propagation, including germination of seeds. The general principles governing pruning. Rotation of crops. The principles regulating drainage. The methods of raising new races of plants. The recognition of the commoner fungus diseases and insect pests. The identification of the commoner plant species in New Zealand horticulture, including weeds. The use of a flora (handbook). The horticultural geography of New Zealand. The garden as a plant association.

PRACTICE OF HORTICULTURE. The various gardening operations connected with the soil. The implements and tools used in gardening. The general cultural operations for the year, under the conditions in different parts of New Zealand. General practice in planting and sowing. Propagation of plants of various classes. Pruning fruit trees and bushes, ornamental trees and shrubs, and roses. Spraying and preparation of spraying material, and other methods of dealing with plant diseases and garden pests. Keeping garden accounts. The passing of a practical examination in the practice of horticulture will also be necessary.

SECTION II.

Candidates to select, and display a reasonable knowledge of, one of the following special subjects:—

- (a) Fruitgrowing.
- (b) The flower-garden in all its aspects.
- (c) Trees and shrubs, together with their propagation and use in horticulture.
- (d) Landscape-gardening.
- (e) Rock-gardening.
- (f) Vegetable-gardening.
- (g) Nursery-management.
- (h) Glasshouse-management.
- (i) Plant-breeding in its wider aspect, including genetics so far as it concerns plants.

- (j) The theory of evolution.
- (k) Horticultural Mycology in respect of the commoner fungous diseases present in New Zealand.
- (l) Horticultural Entomology in respect of the commoner insect pests present in New Zealand.
- (m) The systematic botany of all the families, and the leading genera, concerned in horticulture.
- (n) The principles of ecological botany and their horticultural application.
- (o) Florists' art.
- (p) The horticultural-seed trade in all its branches.

For the purposes of the preceding paragraph, the growing of fruit, flowers, vegetables, trees, shrubs, or other plants shall be understood to include their preparation and packing for market or export, and the marketing or export of such products.

5. TRAINING AND EXAMINATION FOR THE DIPLOMA.

Before being eligible to sit for the Professional Examination for the Diploma, a candidate must pass the Junior and Intermediate Examination, and subsequently practise horticulture for a period of not less than two years.

On the completion of such qualifying period, and on the production of the thesis hereinafter referred to, the candidate may submit himself for the Professional Examination in the subjects defined in Syllabus No. 3 hereunder, the passing of which examination, together with the Examination Board's approval of his thesis, shall entitle him to the diploma, to be known as the National Diploma in Horticulture, New Zealand, and to the privilege of using the letters N.D.H. (N.Z.) after his name, indicating that he is the holder of such diploma.

THESIS. Every candidate for the Diploma shall submit a thesis dealing concisely with a special subject, or with some portion of a special subject, to be chosen by the candidate from Section II of Syllabus No. 2, and approved by the Examining Board. His choice of subject must be submitted for approval by the Examining Board not less than eight months before the date of examination. In the thesis the candidate shall describe some work actually carried out by him, and shall make reference to any features that he regards as original. He shall append a bibliography of the subject. The thesis, together with a statutory declaration (in a form obtainable from the Institute) to the effect that the thesis is substantially the candidate's own work, shall be submitted to the Examining Board not less than three months before the date of examination. The Examining Board shall examine the thesis, and decide whether it

is satisfactory. If it is considered satisfactory but the candidate has failed to pass the Professional Examination, the Board shall decide whether the thesis shall be approved provisionally or rejected. If it is so approved, such approval shall be confirmed as soon as the Candidate passes the Professional Examination.

SYLLABUS No. 3.

PROFESSIONAL EXAMINATION: Open to candidates who have passed the Junior and Intermediate Examinations.

Syllabus No. 2, but interpreted as for an advanced stage, particularly in regard to practical horticulture and its application.

A detailed examination in the special subject taken at the Intermediate Examination, with respect to Section II of Syllabus No. 2.

The Professional Examination shall be mainly of an oral and practical nature.

If a candidate's results in the Professional Examination are considered satisfactory by the Examining Board, but his thesis has been rejected, the Board shall decide whether the candidate shall be regarded as having provisionally passed the examination or not. If he is regarded as having so passed, the pass shall be confirmed as soon as he obtains the Board's approval of his thesis.

6. STUDENTS CONTINUING THEIR TRAINING ABROAD.

Notwithstanding anything hereinbefore provided, in the event of any student producing to the Examining Board evidence, in such form as it shall deem sufficient, of his intention to leave the Dominion for the purpose of pursuing his horticultural studies abroad, the Board may approve of such student presenting himself for the oral and practical portions of the Examination for the Junior or Intermediate Certificate, or the Diploma, after one of the two years of practical work prescribed at that stage for the Certificate or Diploma for which he desires to sit. If, in any such case, the examination is passed, only provisional recognition of the examination shall then be given, the certificate to be issued on the production of satisfactory evidence of the completion of the period of training.

7. UNIVERSITY GRADUATES.

Notwithstanding anything hereinbefore provided, any University student holding a degree or diploma equivalent to the B.Sc. degree of the University of New Zealand, provided that Botany was a subject of his course, shall be eligible to sit for the Professional

Examination on the completion of two years' practical horticultural training in New Zealand to the satisfaction of the Examining Board.

8. EXPERIENCED HORTICULTURISTS ARRIVING IN NEW ZEALAND.

In the case of any experienced overseas horticulturist arriving in the Dominion, and giving the Institute, within two years (or such longer period as the Examining Board may in any instance decide) of his arrival, notice of his desire to obtain its Junior, or Intermediate Certificate, or its Diploma, the Examining Board may determine in any manner it considers desirable—

- (a) the necessity or otherwise of his having to be employed in an approved garden;
- (b) to what extent the provisions for the keeping and supplying to the Examining Board, of diaries may be waived;
- (c) what further studies, if any, he shall be required to take before being eligible to sit for the Junior, Intermediate, or Professional Examinations.

Further, the Board may, provided the horticultural experience of any such person covers not less than fifteen years, grant him exemption from any or all of the foregoing provisions relative to the Junior, Intermediate, and Professional examinations, save that he shall be required to pass an oral and practical examination in practical horticulture. Any person so exempted by the Board and passing such examination shall be granted a Diploma.

9. DATE OF OPERATION.

This Scheme shall be in operation on and after 1st July, 1933.

PLANTING THE HIGHWAYS OF VICTORIA

By courtesy of Mr. G. A. Green, Dominion Organizer, we are indebted to Mr. J. Owen, Hon. Secretary of the Victorian Tree Planters' Association, Town Hall, Melbourne, for the following details of the scheme adopted for planting the Highways of Victoria.

“In Victoria we are fortunate in having our State Highways under one control, that of the Country Roads Board of Victoria. The functions of the Board are the construction and maintenance of these highways and, whilst they are permitted to maintain any trees which are growing on the roads, their Act of appointment does not permit them to spend funds on the embellishment of the roads, by the planting of trees. However, the most important question of all—the maintenance of the trees when planted—is overcome, and matters are made much easier for us. We then seek the co-operation of the Municipalities which abut the roadway, Commercial Travellers, Automobile Organisations, and Influential Citizens for the financing of the preparation of the ground, and the guarding of the trees. The Nurserymen and Seedsmen’s Associations, which are always generous in such community efforts, invariably come to hand with donations of sufficient trees to plant the highway. When sufficient funds are available, the experts of our Association select and allocate the tree subjects for planting, supervise the preparation of the ground, the erection of the guards or fencing and the planting of the trees. The maintenance of the trees is then left to the Country Roads Board and we pay periodical visits to the road and furnish reports on the progress of the trees.

“As most of our highways are of three chains in width, the system adopted for planting is either for four rows of trees or in clumped plantations, three chains in length, which latter is the most popular.”

STERILIZATION OF NARCISSI BULBS

Abstract of article by W. Newton, R. J. Hastings, and J. E. Boshier which appeared in the Canadian Journal of Research, July, 1933.

Through the use of a dye solution, evidence was obtained that a liquid disinfectant may be forced into the narcissus bulb parts invaded by nematodes and fly larvae by immersion *IN VACUO*.

An investigation of the lethal properties of solutions against nematodes and their influence upon bulb growth led to the selection of a silver nitrate solution as a promising disinfectant, but owing to instability of silver nitrate in the presence of chlorides and other substances in tap water and in dirt clinging to bulbs, its use had no commercial possibilities. However, when silver salt was combined with potassium cyanide in the ratio of 1 to 3 by weight, an effective solution of satisfactory stability was obtained.

A solution of silver nitrate 0.05% and potassium cyanide 0.15% by weight, forced into narcissus bulbs by an evacuation process, effectively destroyed bulb nematodes and bulb fly larvae without significant injury to bulb growth under greenhouse conditions.

Field tests with bulbs treated in silver nitrate-potassium cyanide solutions resulted in the reduction of infection from 36.8 to 1%, a 96% control, and no evidence of injury in the foliage or bloom was detected.

NATIONAL CONFERENCE ON HORTICULTURE

The fourth National Conference on Horticulture will be held in Palmerston North, commencing on Tuesday, 23rd. January, 1934, the programme being as follows:—

Tuesday, 23rd. January:—Afternoon, Combined Official Opening of National Conference and of National Flower Show (Show to be held in evening also).

Wednesday, 24th. January:—Morning, Formal Opening of National Conference, followed by Conference, N.Z. Horticultural Trades' Association (Inc.), National Flower Show (Afternoon and Evening).

Thursday, 25th. January:—Separate annual meetings of the following bodies:—

N.Z. Horticultural Trades' Association (Inc.),
Horticultural Seedsmen's Association of N.Z. (Inc.),
Association of Directors of Parks and Reserves.
Banks Lecture at 8 p.m.

Friday, 26th. January:—Annual Meeting of the New Zealand Institute of Horticulture (commencing at 10 a.m.).

NATIONAL FLOWER SHOW, PALMERSTON NORTH, 1934

It was decided at the 1933 Conference that the National Flower Show, 1934, should precede the National Conference, thus enabling the succeeding functions of the various bodies to be attended without interruption. Arrangements are well forward for the National Show, which promises to be a wonderful display with ample space for all exhibits in the A. and P. Association's spacious halls. The Palmerston North Horticultural Society (J. Galland, Secretary) and the District Council of the Institute (J. J. Stevenson, Secretary) are co-operating locally and with the Dominion Organiser and leaving no stone unturned for success.

BANKS LECTURE.

The Banks Lecture, 1934 will precede the Institute's Conference, being held on the evening before. The lecturer on this occasion will be Dr. G. H. Cunningham, Mycologist, Plant Research Station, Palmerston North, the title of the lecture being "Plant Protection," which should prove most interesting.

DAFFODIL NOTES

The National Daffodil Society's North Island Show was held in conjunction with the Palmerston North Horticultural Society's Spring Show on the 13th and 14th September in the A. and P. Association's spacious hall. The exhibits were excellently staged, with ample space for each vase, and the daffodils would challenge comparison with those exhibited at any previous Show of the National Daffodil Society. The South Island Show was held at Christchurch, in co-operation with the Canterbury Horticultural Society, on the 28th and 29th September and the Annual Meeting of the National Daffodil Society was held during the course of the Show.

Copies of the 1933 Edition of the Classified List of Daffodil Names are now available at 1/6 each, from either the Secretary of the Institute or of the National Daffodil Society, Waterloo Road, Lower Hutt. The latter is also prepared to accept orders for copies of the Daffodil Year Book, for transmission to the Royal Horticultural Society. The approximate cost of this publication is 7/6.

INSTITUTE NOTES

PRESERVATION OF NATIVE BUSH.—Representations have been made to the Government, on behalf of the Hawke's Bay District Council, regarding assistance in fencing the Tangoio White Pine Reserve, about twenty miles from Napier, on account of the damage being done by Angora goats. With regard to the conservation of the native bush in the vicinity of Lakes Tekapo, Ohau and Pukaki, a reassuring reply was received from the Lands Department that practically the whole of this bush is under Forest or other reservation, so that its maintenance is safe-guarded and this also applies to the Otago portion of the Waitaki's drainage area. It is stated that steps are being taken to keep the deer in check and that it will soon be necessary to take steps against the ravages of chamois and thar.

NEWS LETTER.—Many appreciations have been received of the News Letter issued in July last. This will be continued half-yearly in June and December.

CONDOLENCE.—The death of Mr G. M. Thomson is a severe loss to the Institute, of which he was an Honorary Fellow, and to the Dunedin District Council. The late Mr. Thomson was an eminent Scientist and an author of note.

NATIONAL ROSE SOCIETY.—All District Councils have been circularized regarding assistance towards the formation of District Councils of the National Rose Society.

GARDEN INSPECTIONS.—A valuable suggestion has been made by the Auckland District Council that lists should be prepared in the principal centres of notable gardens whose owners would allow inspection at reasonable times, to members of the Institute. The Executive Council has adopted the suggestion and has circularized District Councils accordingly.

EDUCATIONAL.—A circular letter has been sent to the Mayors of all City and Borough Councils detailing the Institute's activities in the promotion of horticultural education and requesting that, when filling vacancies on horticultural staffs, earnest consideration should be given to the claims of those who have qualified for the Institute's Certificates or Diploma.

Congratulations are extended to Mr. P. Everett, Orchard Instructor, Gisborne on his being the first candidate to pass the examination for the National Certificate in Fruit-culture.

NEW ZEALAND INSTITUTE OF HORTICULTURE (Inc.)

Statement of Receipts and Payments for year ending 31st March, 1933

RECEIPTS.				PAYMENTS.			
	£	s.	d.		£	s.	d.
To Post Office Savings Bank			269 7 11	By Salaries Dominion Secretary	104	4	2
„ Bank of New Zealand ..			8 1 9	„ „ „ Organizer	40	10	9
„ Cash Dominion Organizer			5 0 0		144	14	2
			222 9 8	„ Travelling Expenses			2 10 8
„ Subscriptions—				„ Capitation fees (District Councils):			
Individual: Current ..	139	7	9	Auckland	10	18	9
Arrears ..	23	2	6	Hawkes Bay	2	5	0
			162 10 3	Palmerston North	2	17	6
Affiliated Societies				Canterbury	3	2	6
Current ..	44	2	0	Otago	2	10	0
Arrears ..	3	3	0	Southland	4	2	6
			47 5 0				25 16 3
			209 15 3	„ Conference Printing			5 16 11
„ Fees: Diploma ..			2 2 0	„ Publications:			
Examination ..			17 6 6	Institute Journal (2 issues) ..	39	13	10
			19 8 6	Examination Papers	1	2	6
„ Publications:				Sundries	9	6	
Journals			11 0				41 5 10
Exam. Papers ..			4 0	„ Refund Examination Fees			2 2 0
Judges Register ..			2 6	„ National Flower Show Advance:			
Judging Rules ..			6	Christchurch	2	2	0
			18 0	Wellington	5	0	0
„ Government Grant ..			100 0 0				7 2 0
„ Plant Recording ..			5 0	„ Office Furniture			37 3 6
„ National Flower Show,				„ Awards of Merit			17 10 0
Christchurch ..			71 6 8	„ Wellington Garden Allotment Scheme			6 13 19
„ Wellington Garden Allot-				„ Office Expenses:			
ment Scheme ..			10 7 3	Office Allowance	16	13	4
„ Awards of Merit (National				Exchange	1	3	10
Flower Show (Wgt'n)			2 16 0	Postages	15	2	3
„ Post Office Savings Bank				Telephone	15	6	0
Interest ..			7 16 9	Rent and Lighting	20	5	0
				Printing and Stationery	11	13	2
				Sundries	8	5	3
							88 8 10

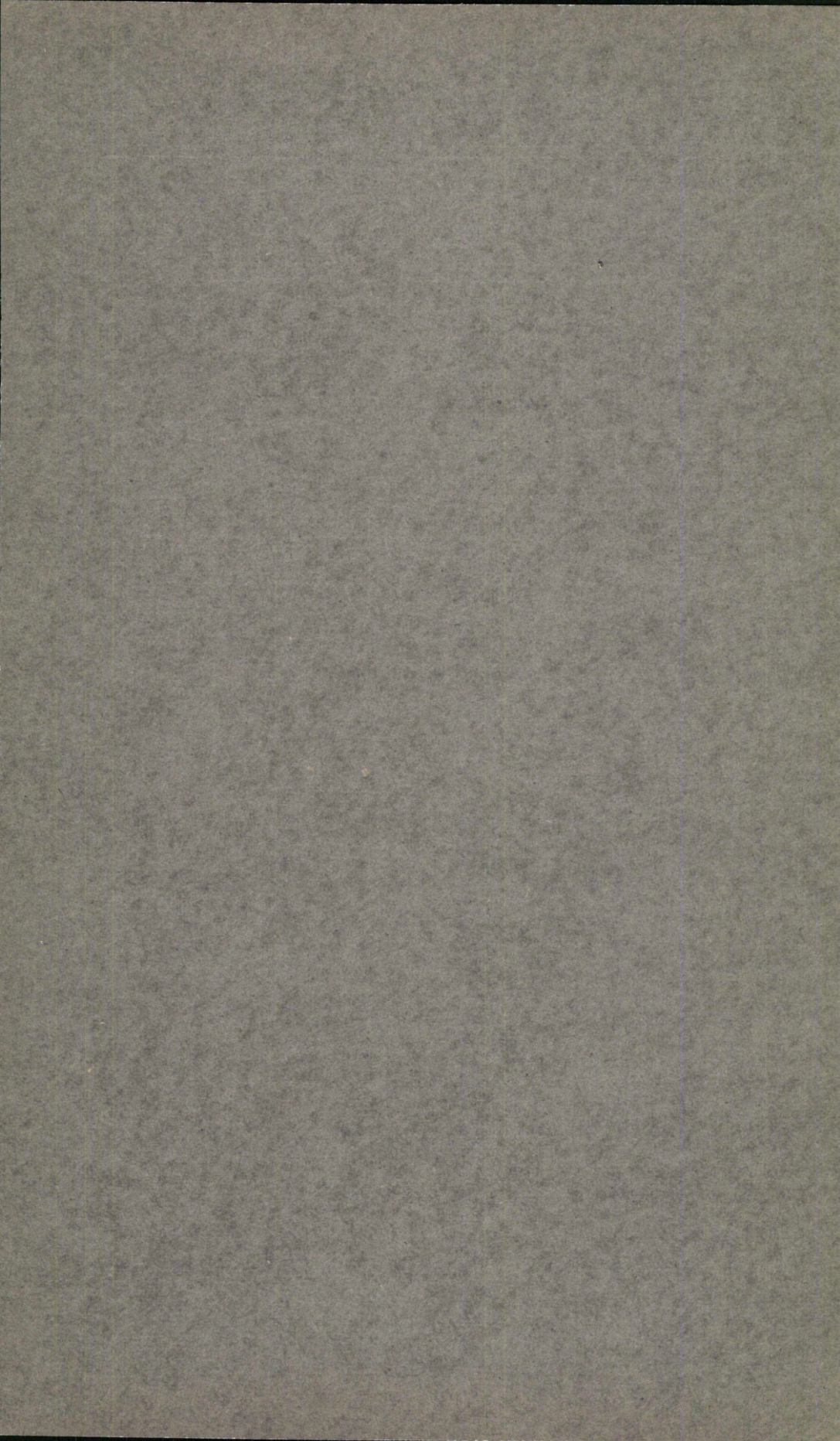


Chrysanthemums in Mr R. E. Bennell's Garden



Photo by Wellington Studios

View in Botanic Gardens, Wellington



NEW ZEALAND
INSTITUTE OF HORTICULTURE
(INCORPORATED)

Patrons: Their Excellencies LORD BLEDISLOE, Governor General,
and LADY BLEDISLOE.

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

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

Hon. Editor: W. R. B. OLIVER, M.Sc., Dominion Museum, Well-
ington.

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

Dominion Organizer: GEO. A. GREEN, 16 Aratonga Avenue, One
Tree Hill, Auckland.

Hon. Secretaries of Local District Councils:

Auckland: J. W. Kealy, P.O. Box 427, Auckland.

Hastings: W. M. H. Diamond, 617 Nelson Street.

Palmerston North: J. J. Stevenson, Boys' High School.

Christchurch: J. N. McLeod, 108 Paparoa Street, Papanui.

Dunedin: Geo. H. McIndoe, P.O. Box 445.

Invercargill: G. M. Broughton, P.O. Box 91.

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 (half-yearly):

To Members: Free.

To Non-members: 5/- per annum (in advance).

Advertising Rates:

These will be supplied on application.

Examinations:

Examinations are held yearly in November.

Students desiring examination should make early appli-
cation to

DOMINION SECRETARY,
N.Z. Institute of Horticulture,
P.O. Box 1237, Wellington.