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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. Junior Certificate in Fruit-culture.
5. National Certificate in Fruit-culture.
6. Seedsman's National Certificate.
7. National Certificate in Florists' Art.

EXAMINATION PAPERS.

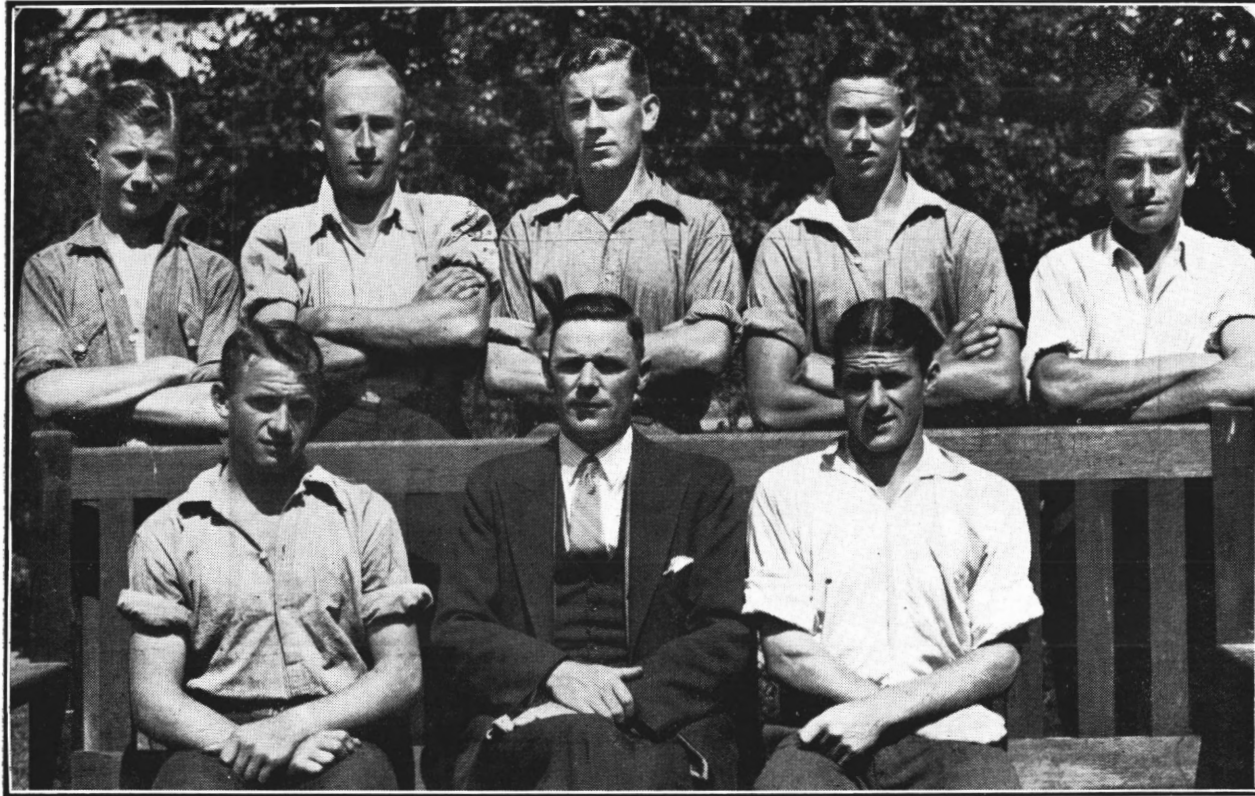
Sets of examination papers used at the last six examinations in horticulture are obtainable on application for sixpence per examination set.

Address all correspondence to:

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



F. J. NATHAN.



Trainees at present studying at the Botanical Gardens ,Christchurch, taken with the Curator,
(Mr J. A. McPherson.)

Journal of the New Zealand Institute of Horticulture

Vol. 6. No. 4.

WELLINGTON,

MARCH, 1937.

HORTICULTURAL EDUCATION IN NEW ZEALAND.

By L. W. McCaskill, M.Sc., Christchurch.

It is ten years since the passing of the "New Zealand Institute of Horticulture Act, 1927." I feel that this anniversary provides a suitable opportunity for conducting a stocktaking of the aims of our Institute and attempting to estimate the results of our efforts over the period. By so doing, we may be able to visualise more clearly the field of work that lies ahead of us.

The Institute was established mainly for the purpose of endeavouring to raise the status of horticulture within the Dominion. All members will agree that it has already done much towards fulfilling that aim. It has had, during the last ten years, many activities such as plant registration, road beautification, scenery preservation, publication of a journal, protection of native plants, judging rules and so on, but its main function has undoubtedly been that of conducting examinations with a view to the improvement of the status of trained horticulturists.

I must go back to January, 1916, when, at the ninth annual conference of the Association of Nurserymen, Mr A. H. Shrubshall, at the instigation of the North Canterbury Council, read a paper "Education in Horticulture." In this paper he stressed the point that, while some system of education for the horticultural profession would result in the advancement of the interests of nurserymen themselves, the great aim should be the broader one of community service. He visualised the time when the much abused term gardener would no longer be used to include both the highly skilled horticulturist and the type of labourer who in England is sometimes referred to as a "worm splitter." Mr. Shrubshall appealed for a

system whereby cadets, in conjunction with their practical experience, would attend technical classes. The possibility of attaining professional status, comparable with that obtainable in other professions, must attract better material to the industry. After much favourable discussion, a deputation finally met the late Right Hon. W. F. Massey with an appeal for technical education in horticulture and the subsidising of public gardens to enable them to employ youths to undergo training.

The proposal was kept alive by annual remits to the conferences and the interest of the Department of Agriculture was so great that, in 1919, plans were prepared to commence a School of Horticulture as soon as the Government was prepared to make funds available. But Government assistance was not forthcoming as, on the verge of completion, the Government was defeated. At the conference of nurserymen held at Christchurch in 1922, it was decided to see what could be done independently. A public meeting was held at which it was unanimously agreed that the time was ripe for the formation of an Institute of Horticulture to further horticultural education, to deal also with nomenclature and bud selection and to advance the interests of horticulture generally. Mr. George A. Green was given power to organise such an institute. He soon interested the University, the Government and the trade and, by 1923, a draft constitution was in preparation. I will not go into subsequent details but would like to stress these points:—(a) That the Institute developed from the desire of horticulturists to improve the status of their profession so that they could serve the public more efficiently and (b) from the recognition of public-spirited men that horticulture was a social service closely interwoven with the lives of the people.

The "New Zealand Institute of Horticulture Act, 1927" gave the Institute power to conduct examinations and by March 15th, 1928, a scheme of examinations for the granting of certificates and diplomas had received the approval of the Governor-General in Council. A six years' course of practical and theoretical work, with examinations at intervals of two years, results in the granting of the National Diploma in Horticulture to successful candidates. The Institute remained an examining, not a teaching body but, through its Local District Councils, it arranged for classes and lectures in various centres to enable trainees, already engaged in practical horticulture, to qualify on the theoretical side.

As a result of nine years' work the Institute has granted recognition to successful candidates as follows:—Diplomas granted without examination to those who had for many years practised as horticulturists—170. Diplomas by examination—48. Intermediate certificates—26. Junior certificates—32. In December, 1936, the number of students on the register was 73.

It will be evident that there is a definite demand for examinations in horticulture in New Zealand, and the certificates and Diploma of the Institute are regarded as necessary qualifications, by those hoping to advance in the profession. Public recognition of these qualifications is made by the Public Service Commissioner and many local bodies who, other things being equal, give preference to applicants holding the National Diploma.

But the system of tuition has not advanced with the increase in the numbers of trainees requiring tuition. Owing to the small numbers of students in any particular centre it is not always possible to organise suitable classes at the Technical Schools. In some cases, too, suitable instructors are not always available. Sometimes instruction is possible only in one of the subjects and often only at the junior standard. In no case is tuition available in Technical Schools at the advanced or diploma stage.

The position in 1936 was as follows:—The number of students registered according to district was:—Auckland, 14; Taranaki, 3; Hawke's Bay, 7; Wellington, 9; Nelson and Marlborough, 4; Canterbury, 17, Otago, 11; Southland, 8. At Wellington and Invercargill, instruction was available at the Technical Schools in two subjects at the junior stage. In Christchurch similar classes are always held at the local Technical College. But Christchurch has for several years gone much farther, and has provided weekly lectures by various local specialists, covering most of the syllabus for the diploma. In 1936, 31 of these lectures were provided, the average attendance being about 14. In addition, lecturers at Canterbury College and the Teachers' Training College, arranged special classes for those trainees working in the Botanic Gardens and the City Reserves Department. It will be seen that only in three centres is regular theoretical instruction available and only in the case of Christchurch are classes available above the junior standard.

It should be mentioned, too, that a correspondence course, arranged by Dunedin horticulturists is available for those students who are unable to attend classes. Wide use is being made of this course.

I do not wish it to be thought that, in making plain the deficiencies in the system of theoretical instruction, I thereby infer there is a lowering of the standards of the examination. Students have to undergo written, practical, and oral tests, and, judging by the tests set in Christchurch, I go so far as to say that in no other profession, with perhaps the exception of medicine, is the examination so thorough.

One of the main aims of education has been said to be "To make a self-educating person." As long as we persist with the present haphazard system of horticultural instruction, we are certainly fulfilling this aim of education but are not being fair to our future leaders in the profession. Imagine a system of medical instruction

without a medical school. In every other profession in New Zealand, students have the advantage of state-subsidised universities, professors, laboratories, and equipment.

In England, horticulture is recognised as a subject for a degree course at some of the leading universities, e.g. Leeds, London, Cambridge and Reading. The Royal Horticultural Society has a horticultural school in connection with their Trial Gardens at Wisley. A two years' course leads to the National Diploma in Horticulture.

In the United States, many universities grant degrees in horticulture and some of them have separate professors for Floriculture, Pomology, and Vegetable Crops.

Australia has, under the control of the Victorian Department of Agriculture, the Burnley Gardens which has accommodation for 40 students for a two years' course entitling them to a Government Certificate in Horticulture.

Now it is not sufficient for me to say that, as other countries have Schools of Horticulture, therefore so should New Zealand. I must show that we have sufficient at stake to warrant the institution of higher education in horticulture and, to be more definite, a National School of Horticulture.

What is implied by the term 'horticulture' in New Zealand? I will adopt a wide definition and include all the cultivated area that is not definitely agricultural or pastoral. The latest available statistics show the areas involved to be as follows:—

Plantations of conifers	760,420 acres.
Plantations of broad-leaved trees,	21,264 acres.
Orchards,	25,087 acres.
Tung Trees,	4,780 acres.
Grape vines	433 acres.
Passion fruit vines,	244 acres.
Hop vines,	590 acres.
Market gardens,	7,284 acres.
Nurseries and seed gardens,	1,276 acres.
Private gardens,	81,694 acres.

In addition to these we should include golf courses and other playing fields, public parks and gardens, and the areas attached to tourist resorts. It is perhaps not too much to claim that National Parks, 2,800,000 acres, Scenic Reserves, 750,000 acres, and forest land controlled by the State Forest Service, 7,910,175 acres, should also be included. Turn all these into capital invested, labour and materials utilised, and ultimate possible returns, together with the inestimable aesthetic benefits, and it will be evident that we place an enormous responsibility on present and future horticulturists.

Yet we have no system of higher education which would produce trained men to manage and develop all this. We have no long-

er a school of forestry to train foresters at a time when deforestation with its serious effects is rapidly becoming an urgent problem.

Another consideration is the bigger part that horticulture will play in the lives of men and women consequent on changing social conditions. In the past, industrialisation has meant that sufficient fruits, flowers, and vegetables could not be produced in private gardens, so that these crops came to be grown in fields, displacing field crops. Further industrialisation of New Zealand will inevitably result in some increase of horticulture at the expense of agriculture. Increased leisure, consequent on shorter working hours, will give more opportunity to the average man to practice horticulture as an amateur. Any organisation of leisure for the people must be free from compulsion but desirable objectives can be created to be followed by encouragement and horticulture is certainly a desirable objective.

If the new leisure is to be divided equally between the films and the horses, then civilisation has not gained by the new legislation and conditions of work.

The increasing complexity of civilised life makes conditions more wearing and, in his spare time, man will need more and more the soothing balm of pleasant surroundings and greater opportunity to indulge in sport, rather than watch others play. We will need more and better public gardens, a greater number of playing areas, and for the care of these we must have more first-class horticulturists.

Then some day, too, an enlightened Tourist Department will realise that the gardens at our various tourist resorts should contain more than masses of nemesias, antirrhinums or geraniums, and that collections of well-grown native plants, representative of the natural vegetation of the district, should occupy much of the available area. Not only would such a policy increase the attraction for overseas visitors but we would inevitably educate a much more important being, the average New Zealander.

I contend then that, in the immediate future, horticulture will inevitably play a much bigger part in the life of the community. To enable horticulturists to play their part to the best advantage, a scheme was recently set on foot for the establishment of a National School of Horticulture. The annual meeting of the Institute has already given its unanimous support to the proposal to establish this school in connection with the Botanic Gardens in Christchurch. Many factors combine to make these gardens the most suitable situation for a school of this kind. Not the least important is the fact that the area known as Hagley Park and the Botanic Gardens is Crown land, administered by a nominated board, enabling long term planning not always possible with a board dependent on the whims of electors for its continuance. Then there is already in existence at these gardens a comprehensive scheme of training for the few trainees, which the present limited resources enable to be employed.

In view of the comparatively small number of students, who would attend such a school, it must be run economically. Its staff could not be a full time one, rather would it have to consist of several part time specialists with a permanent full time director who might combine the duties of director of the school and curator of the Botanic Gardens. The close proximity of Canterbury College, the Canterbury Agricultural College, the Wheat Research Station, and the New Zealand Pure Seed Station, ensures that specialists in all the basic and applied sciences on which horticulture is dependent, would be available for tuition purposes. For practical work and observation in general horticulture, the whole of the Botanic Gardens and City Reserves would be close at hand. All types of fruit, except citrus fruits, are grown within a radius of five miles from Cathedral Square, ensuring full opportunity for the study of orchard problems. Every type of playing area, on every type of soil, is available close at hand, giving future superintendents of reserves a chance to study turf production under widely differing conditions.

As regards forestry, no other centre is so suitably placed for instruction as is Christchurch. The State plantations at Hanmer, and the areas of exotic trees, controlled by the Selwyn Plantations Board and the Christchurch City Council, enable ample opportunity for the study of afforestation with exotics. With recent improvements in communication, students are now within a few hours of the native forests of Westland. There can be studied the importance and methods of conservation and regeneration of the natural vegetation both from the point of view of timber supply and soil protection.

In addition to training our own future horticulturists instead of importing them from abroad, such a school would be an ideal centre for the holding of refresher courses. Doctors in the busiest of professions, find time for and consider these courses a necessity. So would horticulturists, if the opportunity were provided.

Before leaving the immediate province of the Institute, that of conducting examinations, I would like to make one or two suggestions. In a profession such as this, practical knowledge and practical ability are of the greatest importance. The Institute recognises this in the stress laid on the oral and practical tests for examinees. But so far there has been a grave weakness in that standards for these tests have not been laid down. Consequently we find a very exhaustive test of a high standard set in one district; in another the standard is so much lower that it would at first sight appear to have no relation to that in the first district.

Then the present junior syllabus places too heavy a burden on the young trainees. To cover the theoretical part fully, requires four nights per week at Technical School, too great a load for a growing boy working all day. To confine the junior examination to Chemistry, Horticultural Botany and Plant Protection would provide a

comprehensive course without the present duplication and would not unfairly load the young student.

But there are other fields for education in horticulture than that which I have been discussing. Attendance at our horticultural shows is, to a very large extent, confined to people who are already members of the various societies. More people could be attracted, if greater attempts were made to use these shows for the education of the average amateur. Small displays illustrating, together with explanatory notes, the classification of daffodils, the types of roses and dahlias, the points of a good flower or vegetable, would enable many people to receive much more value from the rest of the exhibits in the show. The encouragement of staff shows among the employees of various factories, offices and warehouses, would do much to enlist the interest of hundreds of gardeners in the improvement of the type and quality of the plants they at present grow. In many of these units, there is already a definite demand for lectures and demonstrations. One wonders if these could not be provided as part of the reorganisation, at present on foot, of adult education in New Zealand.

To anyone familiar with the factory gardens competitions in Christchurch, there is no need to stress the value of such work. Not only do such gardens make pleasant surroundings for workers, often engaged in unpleasant industries, but they beautify the neighbourhood for all. Victor Hugo once said, "The beautiful is as useful as the useful." I believe that this applies to all types of garden but particularly to those in connection with our factories.

I believe, too, that many of our local bodies need a little educating, as regards their hoardings. Many people advocate the abolishment of all hoardings. I do not go so far as that but, I do contend, that many waste spaces in our cities could be easily beautified, by the simple expedient of requiring all hoarding proprietors to set their hoardings a little way back from the street. Then they could require the owners to lay out some type of garden in front and insist that such garden be maintained at a standard equivalent to that of the public reserves.

Then there are our schools, in some ways the most important and urgent field to be exploited. It is true that many of our school-grounds have no soil, merely asphalt or shingle. But the great majority have ground available for gardens, which could be made places of order and of pleasant colour schemes and beauty—not merely a group of isolated plots for cropping purposes only. We want a sense of the beautiful and a regard for it to be general, not exceptional. We can develop this by surrounding the child, during his school days, with beautiful things and he will become more impressed and intimately acquainted with the plants, through his own work among them. Actually, to grow a plant, is to come into inti-

mate contact with a specific bit of nature. The easiest way to teach the child biology is to permit him to learn through practising horticulture for himself.

With our schools developed on lines such as these, vandalism would soon be a thing of the past. The child would find for himself the relationship of facts to one another. Gradually, he would begin to reason, to imagine scientifically, to see for himself, and to regard the things around him as a sacred trust. His outlook on life and appreciation of all her works would develop into a deep love and regard and a desire for their perpetuation. As the Duke said in "As You Like it" he would find "Tongues in trees, books in the running brooks, sermons in stones and good in everything."

HOLLYHOCK DELPHINIUMS.

By Charles H. Cuff, N.D.H. (N.Z.) C/o "Eridge," Masterton.

If I were permitted to proclaim a monarch of the herbaceous border, I should nominate the stately hollyhock delphinium. The recent attention given to this flower by professional and amateur growers, who have devoted much well spent time, has placed the modern delphinium foremost amongst herbaceous border subjects.

It is intensely interesting to raise these plants from one's own seed, watching the gradual development of numerous varieties. Almost every seedling differs in colour, with flowers double, semi-double and single and with differing types of eyes. The flower spikes also vary from a long cylinder to pyramid form.

With regard to the question of hybridizing, I should say that this should be left to nature, but every care should be taken not to allow the old Belladonna type of delphinium to grow in the vicinity. Far greater success is assured, by saving seed from such varieties as Mrs. Newton Lees, Cambria, Sir Neville Pearson, The Shah, Monarch of Wales, etc. Seed from these, which has been fertilised by bees, is to be preferred to hand-fertilised seed.

The seed should be collected, after the spring flowering, and sown in a cool house, towards the end of July or early in August. The seed usually gives even germination. When pricking off the young plants, the soil for their reception should be slightly heavier than what is generally used for most other seedlings. This soil should be pressed down fairly tightly as this encourages a better rooting system and results in the production of a firmer and more compact crown, than is obtainable from more free and lighter boxing compost. I have noticed that the majority of later germinating plants produce single blooms, of which many are of campanulate habit. It is difficult to say whether this is of general occurrence, but it is a point of great interest.

The seedlings should be planted out at the end of September or in October, nine inches to a foot apart. The space between the rows

should be from two feet six inches to three feet. It is necessary to allow this space for working between the rows, during the flowering season. Delphiniums should not be planted in ground, into which fresh manure has been recently dug. Animal or fowl manure should be stacked for, at least, two or three seasons before use, but a better plan is to use a section of a vegetable garden or flower border, which has been heavily manured the previous season. Soil of medium or heavy nature is preferable and it must be firmly trodden, leaving a fine tilth.

Seed may also be sown in March or early in April. After having been pricked off in the winter months, the young plants should be allowed to remain in the boxes, but should be planted up at the first sign of movement in growth of crown. These seedlings will commence to flower about November, but will only produce small flowering spikes. The flower spike should be removed before seed pods commence to form. When the foliage starts to fade, the stems should be cut back nearly to ground level. This will enable a plant to produce a better flowering stem in the early autumn months.

Although there is usually only one flowering season, I must express my preference for the sowing of seed in spring. The spikes are much more vigorous and they worthily assist the colour scheme of the garden prior to and during the flowering period of dahlias and other seasonal flowers. Spring sowing results in a much more strong and healthy crown for transplanting during the following season. The two flowerings of the seedling, from autumn sown seed, often result in a loss of vitality, leaving the crown poorer and weaker, with less chance of surviving the winter.

I have, this season, between from one hundred and five hundred seedlings, raised from seeds sown in July and saved from imported stock. These have been flowering since early December, with a very low percentage of singles, and will carry on until well on in March. There is a wonderful variation of colour in beautiful spikes, four to five feet long. Individual blooms, in some instances, at least, are $2\frac{1}{2}$ to $2\frac{3}{4}$ inches in diameter. On one particularly fine spike of pyramid shape, the base blooms are carried on stems, which are $7\frac{1}{4}$ inches long. (Compare this result with plants from seed, hand-fertilised for hybrids, which give very little satisfaction as they lack much variation in colour and, in most instances, are severely attacked by mildew).

These plants will be treated as annuals and others will be used as temporary stock in the borders with the exception of a few, of exceptional merit, and which are, at present, not showing the slightest sign of mildew. Some of these plants may eventually prove to be mildew proof. Varieties claimed to be immune from mildew, are now on the market e.g. Ruffled Beauty, Mrs. J. S. Courthauld, Ayliffe and Rose Marie. It is hoped that, in the near future, the mildew affected delphinium will be a thing of the past.

F. J. NATHAN.

All Institute members will regret the resignation of Mr. F. J. Nathan, who has held the office of President continuously since the 13th August, 1925.

The Institute was fortunate, in securing for its President, one of the keenest horticulturists in New Zealand. His garden at Palmerston North, with well grown trees and shrubs, prize dahlias, roses and sweet peas, cut flowers and quality vegetables, evidenced his love and skill. Many champions were shown and yet it was infinitely more than the usual exhibitor's garden as the touch of the garden artist was always there.

Mr. Nathan's horticultural activities, however, were by no means confined to the sphere of his own garden. He was also keenly interested in agriculture, forestry, and the preservation and protection of our native flora, the citrus industry, fruit growing, the nursery and seed industries, horticultural education and research work and practical instruction benefiting any branch of horticulture.

Notwithstanding his deep interest in horticulture, Mr Nathan is also a man of affairs, who was instrumental in obtaining Government grants for various purposes and led many successful deputations in the furtherance of Conference and the Executive Council's recommendations.

His practical views regarding the commercial utilization of horticultural and agricultural products, always commanded respect.

His efficient and expeditious conduct of meetings, and especially of the Annual Conferences, and his uniform tact and courtesy, evoked admiration.

Whilst we will miss Mr Nathan's guiding hand and genial personality, it is pleasing to know that he will still continue to take an interest in the Institute's affairs. We trust that he will long be spared to enjoy the leisure he so well deserves.

SUMMARY OF PROCEEDINGS OF FOURTEENTH ANNUAL CONFERENCE.

Held in the Board Room, Dominion Farmers' Institute, Wellington, Thursday, 11th March, 1937, at 11 a.m.

(On account of infantile paralysis in the South Island, the Seventh National Horticultural Week, which was to have been held at Christchurch from the 26th to the 28th of January last, was abandoned at the request of the Director-General of Health. The Permanent Committee then agreed that each national organisation was free, this year, from any obligation of a Combined Conference but that the usual National Horticultural Week would be held next year).

REPORTS.—The following reports were received and adopted:—

1. Executive (with Statement of Accounts).—See Journal of December, 1936.
2. Examining Board.—See Journal of December, 1936.

ELECTION OF OFFICERS, etc.—

President:—F. S. Pope, Esq., Wellington, was elected unanimously.

Vice-Presidents:—Messrs. T. L. Lancaster (Auckland), Percy Thomson (Taranaki), C. W. Corner (Hawkes Bay), J. G. MacKenzie (Wellington), P. Black, (Palmerston North), T. Kigg (Nelson), J. A. McPherson (Canterbury), D. Tannock (Otago), and Sir R. A. Anderson, C.M.G. (Southland).

Executive Committee:—Mrs. Knox Gilmer, Professor H. B. Kirk, Dr. W. R. B. Oliver, Messrs. A. H. Cockayne, J. A. Campbell, T. Waugh, W. K. Dallas, W. C. Hyde, W. S. Mason, F. J. Shanks, T. C. Brash, Herbert J. Poole, E. Phillips Turner, and A. McMillan.

Hon. Auditor.—J. L. Arcus, Esq., (re-appointed).

Hon. Fellow.—G. Jacquery, Esq., (Southland).

Honorary (Overseas) Member.—Charles H. Curtis, Esq., V.M.H. London.

Retiring President.—A motion by Mr. F. S. Pope "That a most hearty vote of thanks be conveyed to Mr F. J. Nathan, retiring President, for his many valued services to the Institute, also its deepest gratitude for all that he has done, with earnest wishes for his complete restoration to health," was carried by acclamation.

CHAIRMAN'S REMARKS.—Mr. J. G. MacKenzie, Vice-President, Wellington, who acted as Chairman until the election of the new President, regretted the absence of Mr. F. J. Nathan, and detailed the circumstances leading up to the holding of the Institute's Conference at Wellington this year and extended, on behalf of the Institute, a welcome to all and especially to delegates from other centres. He stated that the Institute's educational programme continues to make satisfactory progress, as would be seen from the Examining Board's Report. At the 30th September last, 215 Diplomas had been issued, 17 Intermediate Certificates, 29 Junior Certificates, 33 Florists' Certificates and 16 Seedsmen's and, since then, the figures had been increased to:—Diplomas 218, Intermediate 26, Junior 32, Florists' 47 and Seedsmen 18.

The formation, during last year, of the Taranaki District Council and the excellent work of its Hon. Secretary, Mr. J. C. McDowall, and the great assistance given by Mr. T. Horton and other keen Taranaki members, were mentioned. A small party from the Executive Council visited New Plymouth at its inauguration, and its members were treated with unbounded hospitality and the whole proceedings were most enthusiastic. The membership of this Council now stood at about fifty, practically all financial—an outstanding example of excellent spade work and co-ordination.

Reference was also made to Arbor Day celebrations and to the good work of the Minister of Internal Affairs in arranging for the Dominion Conference on Tree Planting and Bush Conservation.

PRESIDENT'S ADDRESS.—The President, in returning thanks for his election, said he felt greatly honoured, seeing that he was not a prominent horticulturist. He noticed that all altruistic institutions, such as the Institute, pass through three stages:—1. A vigorous start with much talk and a good deal of unstable support. 2. A duller period, with hard work for those really interested, and with the unstable element dropping away. 3. The nature of the third period depends upon whether the institution does or does not fill a useful place in the community.

If it does not, the third period takes the form of premature old age and ultimate death; but if a real need is being supplied, the institution's third period consists of steady and continuous work, with increasing public support and appreciation.

The history of our Institute shows that it has duly passed through the first two of these stages. We had the vigorous start, with plenty of talk and much support that proved to be quite unreliable, when it was found that something more than talk was wanted. Then we have had a much longer and duller period, during which a great deal of spade-work has been done by a comparatively

small number of willing workers, whose services have been beyond all praise and to whose efforts, the present position of the Institute is almost entirely due.

Now we are crossing the threshold of the third stage, and approaching that "tide in the affairs of men" to which Shakespeare referred. Are we going to miss it and to allow senescence and death to end the hopes with which the Institute was founded, or are we to carry on manfully in the knowledge that we are doing a real service to our own Dominion and our own generation, and possibly, small though we be, acting as an inspiration far beyond our own boundaries and our own generation?

The indications, I submit, are abundantly clear that we shall, if we do not slacken our efforts, continue to go forward and not backward. To mention but a few of the salient indications to which I refer: our educational work is growing steadily, there being now a considerable number of students working for our several certificates in general horticulture, in seedsmen's work, in florists' work or in fruit-growing, and a few studying for the full diploma in general horticulture.

An excellent branch of the Institute has lately been started in Taranaki; the suspicion with which some of the larger horticultural societies regarded the Institute, in its early years, is steadily being replaced by a desire to co-operate and—a very significant indication—the Institute's financial position is gradually gaining strength.

In undertaking the duties and responsibilities of acting as your president, I would like to assure you that, in subscribing to and working for the Institute, you are certainly not wasting your money or your time. A number of those present at this Conference, will be able to bear me out when I say that the general position of horticulture and of the horticultural trades, in the public estimation, is vastly better to-day than it was before the Institution was formed.

Although it is not claimed that the whole of this improvement is due to the work of the Institute, it is beyond question, that our body is entitled to a great part of the credit. Let this encourage us all not to weary in well-doing. I wish to endorse most heartily Mr. MacKenzie's words of welcome to you all and again to thank you for giving me the privilege of trying to be of some service in the cause of horticulture in this our beloved country.

REMITTS ADOPTED.

EDUCATIONAL:—

1. That the Syllabuses for the Junior, Intermediate and Professional Examinations for the National Diploma in Horticulture, should be amended to enumerate the study of the New Zealand Flora especially in connection with:—

Syllabus No. 1. under "General Principles of Classification."

Syllabus No. II. under "Practice of Horticulture."

Syllabus No. III. under Syllabus No. II. interpreted as for an advanced stage.—Refer to Executive Council for consideration of Examining Board.

2. That youths engaged in horticultural practice, combined with organised study, may become registered students of the Institute on commencing work in an approved garden or nursery.—Refer to Executive Council for favourable consideration with the addition of the words "irrespective of age."
3. That closer contact between registered students and the Examining Board is desirable. That this should be made possible through regular visits by a competent, qualified organiser, and that early consideration should again be given by the Executive Council towards such an appointment.—Executive Council recommended to consider the matter.
4. That at least one representative from the South Island be added to the Examining Board of the Institute.—Same as 3.

HONORARY ELECTION:—

5. That the maximum number of Honorary Overseas Members and of Honorary Fellows, the latter to be residents of New Zealand at the date of their election, shall not exceed twenty for each class. That not more than one Honorary Overseas Member and not more than one Honorary Fellow shall be elected annually until the foregoing number is reached.

CAPITATION:—

6. That, provided the funds of the Institute will permit, the capitation of District Councils from members' subscriptions be increased from twenty to forty per cent.—Recommended to the Executive Council.

JOURNAL:—

7. That members qualified to do so be urged to offer contributions to the journal.—Suggestions to be conveyed to District Councils.

PARKS AND GARDENS, ETC.:—

8. That the attention of the Government be drawn to the necessity for the provision of adequate gardens, parks, and recreation areas in all urban and suburban districts and that, as a step in the direction of encouraging the setting aside and development of such areas, the Government be urged to consider the incidence of local body taxation, as affecting all botanic gardens, parks

and recreation areas, owned by Local Bodies and used by the public, with a view to alleviating the burden of such taxation. In support of this, it should be pointed out that practically no revenue is derived from such areas. The capital outlay and cost of maintenance is, in many cases, a burden on a controlling authority, which is endeavouring to provide adequate recreation facilities for the public.

ROAD BEAUTIFICATION:—

9. That consideration be given to "Coronation" plantings of suitable native and exotic trees, in approved places, along the Main Highways in both Islands, during the 1937 planting season.—Refer to Institute's representative at Dominion Conference on Tree Planting, etc., with instructions to support "Coronation" plantings.
10. That this Conference heartily supports all movements for road and country beautification by the planting of trees and shrubs and the retention of trees and native bush wherever possible.—Refer to Institute's representative at above Conference.

TREE PROTECTION:—

11. (a) That the attention of the Government be drawn to the widespread destruction caused by clearance of trees and bush from land adjoining telegraph and power lines.
- (b) That the Government be asked to define the legal rights of the various Local Authorities, Power Boards and Government Departments in regard to removing such trees and bush from public and private lands.
- (c) That this Institute opposes the recommendation made to the Government by a recent local body conference that wider powers be granted to the above authorities to remove such trees and bush from private lands.—Refer as above.

FOREST PRESERVATION:—

12. That congratulations be extended to the Hon. Minister of Internal Affairs in the policy he has adopted with regard to the extermination of deer and other foreign animal enemies of our forests and mountain vegetation.
13. That appreciation be conveyed to the Hon. Minister of Lands and Forests upon his action in securing the permanent reservation of the Crown's holdings in the Urewera country, which is one of the most important actions in connection with forests in the history of the Dominion.
14. (a) That the Government again be urged to provide for the re-constitution of the Scenery Preservation Board and the appointment of an Inspector of Scenic Reserves.—If appointment already made, congratulate.
- (b) That the Ministers directly concerned be acquainted with repeated demands of the Institute in this connection.

15. That this Institute notes with appreciation, measures taken by the Government, especially the Hon. Minister of Public Works, to prevent unnecessary, wilful damage to bird and plant life in the vicinity of Public Works Camps.
16. That, in view of the importance of Stewart Island as a sanctuary, the attention of the Government be directed to the increasing damage there by deer, and to the urgency of more active measures of extermination, with more strict supervision over the introduction of exotic animals to islands in its immediate vicinity.
17. That the remit passed at last Conference, urging Government action in the classification of all land in New Zealand, at present covered with standing bush, with a view to the prohibition of further clearing, be again brought to the notice of the Government in its original form and some indication requested of the manner in which it has been received.—Refer to Institute's representative at Dominion Conference.

OTHER BUSINESS.

DOMINION CONFERENCE ON TREE PLANTING AND BUSH CONSERVATION:—

The Hon. W. E. Parry, Minister of Internal Affairs, forwarded a letter regretting that, owing to his absence in the South Island, it was not possible to convey in person to the Conference, an invitation for the Institute to be represented at the Dominion Conference on Tree Planting and Bush Conservation to be held at Parliament Buildings, Wellington on the 2nd proximo, when his Excellency—the Governor-General will be in the Chair. He therefore, extended an invitation to send a representative and added “it is to bodies such as yours that I am looking for very great help in the work of endeavouring to place tree planting and conservation in the position of national esteem they deserve.”

A letter was also received from Mr. J. B. Paterson, Chairman of the Auckland District Council, requesting representation of his Council at this Conference. It was stated that all steps would be taken to keep such activities alive in Auckland, especially the preservation of Waipoua, Trounson, Waitakere and Rangitoto, not to mention other areas.

It was decided to thank the Hon. Minister, for the invitation and to advise that the President will represent the Institute at the Conference. With regard to the letter from Auckland an assurance was given that all possible would be done to further this request,

PUKETITIRI GIFT:—

Reference was made to the magnificent gift made by Mr. and Mrs. F. M. Hutchinson, Napier, of 274 acres, including 80 acres of bush, at Puketitiri, about 35 miles from Napier, as a Scenic Reserve and Domain. It was mentioned that this is one of the best pieces of virgin bush in the district. It was directed that a letter should be sent to Mr. and Mrs. Hutchinson expressing the feelings of the Institute that their gift is an excellent one in every respect.

SCHOOL OF HORTICULTURE.

Mr. Campbell referred to the advantages of the proposed School of Horticulture at Christchurch and the benefit it would be to the Institute and its students and he moved the following motion, seconded by Mr. Mason:—"That this Conference pledges its goodwill and support to the proposed School of Horticulture." Mr. J. A. McPherson, in thanking the Conference for its resolution, said that the matter was being investigated by several Government Departments. In submitting this scheme he had looked upon it as a member of the Institute and not as Curator of the Domain Board. He considered that a School of Horticulture in New Zealand for young New Zealanders, viewed entirely from the national point of view would be a wonderful undertaking, if the Institute, as the national body on horticulture, would get behind it. He sketched a brief outline of the scheme, mentioning that one condition was that a student must study and sit for the National Diploma in Horticulture. Professor Kirk, Chairman of the Examining Board, said that those who had viewed the scheme considered it an excellent one. He thought that, whilst the study for the Institute's Diploma might be obligatory at the commencement, later on, the course should be open to all. Messrs. MacKenzie and McLeod also favoured the scheme and the latter stated that facilities in Christchurch are unique as much work has been done there to further horticultural education. The School of Horticulture would be the fruition of what has been going on for years. The President mentioned that a similar scheme had been brought forward in Wellington eighteen years ago, with an offer of land in the Hutt Valley. It had been on the verge of completion but the then Government was defeated.

COCKAYNE MEMORIAL:—

The following motion was moved by the President and seconded by Mr. J. A. Campbell "That the Executive Council be requested to communicate with the Royal Society of New Zealand with regard to having the matter of a suitable memorial to Dr. Cockayne, F.R.S. finalised as early as possible and especially to the erection of a monument to mark his grave in the Otari Open-air Native Plant Museum."

THAMES BEAUTIFYING SOCIETY:—

Correspondence from the Southland District Council was read, requesting assistance in obtaining thirty rhododendrons and other

ornamental trees and shrubs for the Thames Beautifying Society. Mr. J. A. McPherson said that if the letter was referred to the Secretary of the Association of Parks and Reserves Superintendents, he had no doubt that the requirements would be met and a recommendation to this effect was carried. On the suggestion of Mr. Campbell, it was decided that this matter should be favourably recommended to the Institute's District Councils requesting them to lend what support they could in addition.

FRAMING OF REMITS:—

The Canterbury District Council forwarded the following resolution "that in future the Executive impress upon District Councils the advisability of clearly stating the reason for framing remits to be considered at Conference.

It was decided to recommend to District Councils that remits should be drawn with as much clarity and self-explanation as possible.

PROXY VOTING:—

Notice of motion was given "that proxy voting be abolished from the rules of the Institute.

REVIEWS.

THE R.H.S. DAFFODIL YEAR BOOK, 1936.

Opening on a note of mourning, the Royal Horticultural Society's Daffodil Year Book for 1936, records the passing of three important figures in the Daffodil World, namely Mr. P. D. Williams, V.M.H., Rev. G. H. Engleheart, M.A., V.M.H., and Dr. R. V. Favell. The fame of the two first named gentlemen as raisers who have set the standard for modern daffodils is recognised throughout the world, and their names will live for ever in the history of the flower.

The Year Book is, as usual, well produced and contains many interesting chapters dealing with every aspect of daffodil growing, together with suitable illustrations.

R. Seymour Cobley, Esq., contributes an article, "The Progress of Daffodil Growing in England." This is actually a review of the industry of bulb growing which has now assumed tremendous importance in England, an importance which is realised when one reads the statement that in addition to the vast quantities produced in England, over 800 million bulbs were imported from Holland in 1935."

In an interesting chapter on "The Cultivation of Daffodils in a Cool Greenhouse," Messrs. J. L. Richardson and Guy L. Wilson have collaborated in setting down their experiences in the method of grow-

ing daffodils in pots. The very complete directions given and the illustrations of the excellent results obtained, will be sure to tempt enthusiastic growers to try their hand with a few varieties.

That a great deal of attention is being paid to the production of pink-crowned daffodils is evident from the article by the Rev. G. T. C. Pearce, who gives a list of a number of crosses which have produced flowers of this type.

No less interesting is the account of a discussion on pink daffodils at the Daffodil Dinner which took place at the London Show.

"Daffodil Growing in Holland" by Mr. Bram Warnaar gives an insight into the methods and wonderful organisation of the growers in that country. It is interesting to find that the industry there is of such national economic importance that it is now placed under Government control. Prices are regulated, and a strict control is kept on production. The scheme is apparently self-supporting as the costs of administration are paid from a fund created from a tax per acre.

Reports of English Daffodil Shows make interesting reading and, from a comparative point of view, it would appear that we in New Zealand are keeping well up to standard.

Accounts of the daffodil in other countries, Australia, South Africa, California, Norway, etc., serve to demonstrate the universal popularity of the flower.

Hybridists will find useful a lengthy table prepared by Mr. A. F. Calvert, F.C.S. showing the parentage of a number of daffodils. This should provide an excellent key on which future possible crosses may be based.

Altogether the Year Book contains a wealth of information of commercial, scientific and general interest. It will prove invaluable for reference purposes, and reflects great credit upon the sub-committee of the Royal Horticultural Society responsible for its production.

—H. J. POOLE.

FEILDEN, G. St. C1. and GARNER, R. J. Vegetative propagation of tropical and sub-tropical fruits.

Tech. Comm. Imperial Bureau of Fruit Production, East Malling, Kent, England, 7, 1936, pp. 67, bibl. 123, 2s.

This compilation forms the second of a series of articles issued by the Imperial Bureau of Fruit Production on the vegetative propagation of tropical and sub-tropical horticultural crops, the first on citrus having appeared in 1932.

It is based on a thorough examination of existing literature and on the answers to enquiries sent to many workers in the tropics.

It is in two parts. In the first will be found an illustrated and simple account of the different operations of budding, grafting, etc. referred to later. This is very welcome in view of the looseness

with which certain propagation terms are used in different parts of the English speaking world.

An account follows of the methods commonly recommended for use or trial in the asexual propagation of some 100 types of fruit and references are given to the source of the information in each case.

The bibliography concerned precedes a useful index in which both common and scientific names of the plants discussed are included.

Sir Geoffrey Evans, in his introduction, remarks on the completeness of the information and the number of the tropical plants dealt with, and indeed it should prove a useful reference work to the tropical horticulturist.

The 67 pages form an admirable key to the vegetative propagation of tropical and sub-tropical fruits. The methods and recommendations are written with commendable restraint. Everyone interested in the work should obtain a copy.

GREENSLADE., R. M.—Horticultural aspects of woolly aphid control together with a survey of the literature.

Tech. Comm. Imperial Bureau of Fruit Production, East Malling, Kent, England, 8, 1936, pp. 88, bibls. 555 (general) and 156 (biologic control), 2s 6d.

The voluminous literature published during the last hundred years on woolly aphid or American blight and the divergence of opinion there expressed have long demanded examination and critical analysis.

In November, 1933, a Memorandum and Questionnaire on the incidence and control of the pest was circulated by the Imperial Bureau of Fruit Production to all the apple growing countries of the world and co-operation invited.

The literature and the replies to the questionnaire have been thoroughly sifted by the present author, who has now for some years at East Malling been testing new seedlings for immunity, investigating control measures in the orchard and studying the causes of immunity or resistance, and is, therefore, in an exceptionally good position for examining the situation. This he does most clearly and concisely for practical horticulturists, no less than for fellow investigators in Technical Communication 8.

First the insect and its habits, its spread in the orchard, its methods of feeding and its possible alternative hosts are dealt with. Next the bearing of climatic factors, temperature, humidity, wind and sunlight, on its incidence is considered. In many parts of the Empire, the normal combination of these factors is propitious for a heavy attack, whereas in England an increase in temperature and sun and in Rumania an increased rainfall will induce it. Control

measures are considered in detail:—(1) Artificial control including spraying, fumigation, tree injection, cultural practice, etc. (2) Natural control by *Aphelinus mali* and other parasites. The varying measure of success achieved in different countries is noted. (3) Control by use of resistant stocks and varieties. A particularly interesting account is given of existing resistant varieties, of the breeding work in progress in England at Merton and East Malling, and of the few indications afforded as yet, of the possible causes of resistance. Lastly (4) Control by legislation, e.g. quarantine measures, etc.

The literature from nearly 300 sources is further dealt with in the two annotated bibliographies which follow. The first, general, contains 555 references, while the second contains 156 references to articles on the biologic control of the pest.

Finally, the Memorandum and Questionnaire noted previously are reproduced in full, together with a list of persons who replied. This list forms, incidentally, a useful index of workers interested in the subject.

This comprehensive review of literature and experience in all parts of the world is perfectly intelligible to the practical horticulturist and the 56 pages of bibliography must surely contain everything of importance on the subject that has been published.

This Technical Communication No. 8 of the Imperial Bureau of Fruit Production should be of the greatest value to growers and investigators, where woolly aphis control has to be considered.

INSTITUTE NOTES.

PERSONAL: At the February meeting of the Executive Council, twelve months leave of absence was granted to Mrs Knox Gilmer, Wellington, who is now on a holiday visit to the United Kingdom. Best wishes were conveyed for an enjoyable and healthful holiday and a safe return to her native land.

CONGRATULATIONS have been extended to the Rev. Dr. J. E. Holloway, lecturer in botany at Otago University, and until recently Chairman of the Otago District Council, on his election as a Fellow of the Royal Society.

EDUCATIONAL: Mr. J. A. McPherson, Christchurch, has been appointed a member of the Examining Board.

The 1937 Syllabus in Horticulture, drawn up by the Canterbury District Council for the Christchurch Technical College, was received with appreciation at the March meeting of the Executive Council and will be referred to the Examining Board for its information.

LODER CUP COMPETITION: The Loder Cup Award for 1936 has been made to Messrs George Simpson and John Scott Thomson (jointly), both of Dunedin. The award is made annually for the most meritorious service in encouraging "the protection and cultivation of the incomparable flora of the Dominion."

The award has been made on this occasion for outstanding botanical exploration, surveys, research, cultivation, publications, photography and lectures in respect of the native flora.

The presentation of the Cup and of the individual Certificates of award will be made at a public function arranged by the nominating bodies, viz. the Otago Branch of the Royal Society of New Zealand and the Otago and Southland District Councils of the Institute.

MRS. KNOX GILMER.

The Queen of Horticulture,
Leaves us for overseas.
We'll miss her joyous presence,
Like to a warming breeze.

She made the lovely kowhai,
The emblem of our land.
Crimson pohutukawa,
Is seen on every hand.

The guardian of our flora,
The keeper of our trees,
Our beautifying spirit,
Who loves both birds and bees.

We wish her health abounding,
May joy be hers in showers.
We know that she will surely find
Her pathways strewn with flowers.

—G.S.N.

(Reprinted from the "Evening Post," Wellington.)

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