

Serial Number 1951/176

THE INSTITUTE OF HORTICULTURE EXAMINATIONS
ORDER 1951

B. C. FREYBERG, Governor-General

ORDER IN COUNCIL

At the Government House at Wellington, this 1st day of
August, 1951

Present :

HIS EXCELLENCY THE GOVERNOR-GENERAL IN COUNCIL

PURSUANT to the Royal New Zealand Institute of Horticulture Act, 1927, His Excellency the Governor-General, acting by and with the advice and consent of the Executive Council, doth hereby make the following order.

ORDER

1. (1) This order may be cited as the Institute of Horticulture Examinations Order 1951.

(2) This order shall come into force on the seventh day after the date of its notification in the *Gazette*.

2. Pursuant to section 4 of the Royal New Zealand Institute of Horticulture Act, 1927, approval is hereby given to the schemes of training and examination submitted by the Royal New Zealand Institute of Horticulture (Incorporated) for the granting of—

- (a) Certificates and diplomas in horticulture as set out in the First Schedule hereto :
- (b) Certificates and diplomas in fruit culture as set out in the Second Schedule hereto :
- (c) Certificates in school gardening as set out in the Third Schedule hereto.

3. Approval is hereby withdrawn of the scheme of training and examination for the granting of certificates and diplomas in horticulture approved by Order in Council made on the 12th day of March, 1947, and published in the *Gazette* on the 20th day of March, 1947, at page 336 :

Provided that this withdrawal shall not affect the validity of any certificate or diploma properly granted or any act properly done under that scheme before the making of this order.

SCHEDULES

FIRST SCHEDULE

SCHEME OF TRAINING AND EXAMINATION OF CANDIDATES
FOR THE CERTIFICATES AND DIPLOMA IN HORTICULTURE
OF THE ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE
(INCORPORATED)

PRELIMINARY

1. This scheme of training and examination is issued under the authority of the Royal New Zealand Institute of Horticulture Act, 1927, as extended by section 60 of the Statutes Amendment Act, 1946.

2. In this Schedule, unless the context otherwise requires,—

“Diploma” means the National Diploma in Horticulture [N.D.H. (N.Z.)] granted by the Institute :

“Examining Board” means the Examining Board set up under clause 3 of this scheme :

“Garden” means any botanic, institutional, municipal, nursery, or private garden :

“Institute” means the Royal New Zealand Institute of Horticulture (Incorporated) :

“Intermediate certificate” means the Intermediate Certificate in Horticulture granted by the Institute :

“Junior certificate” means the Junior Certificate in Horticulture granted by the Institute

3. (1) There shall be an Examining Board set up by the Institute for the purpose of controlling all matters relating to examinations under the Royal New Zealand Institute of Horticulture Act, 1927.

(2) The Examining Board shall consist of not less than nine and not more than thirteen members, as the Dominion Council of the Institute from time to time determines.

(3) The members of the Examining Board shall be appointed each year by the Dominion Council of the Institute as soon as practicable after the annual conference of the Institute, and shall hold office until their successors are appointed.

(4) If any member of the Examining Board dies or resigns, the vacancy so created may be filled in the manner in which the appointment to the vacant office was originally made.

(5) The Examining Board shall regulate its procedure as the Dominion Council of the Institute directs ; and, in the absence of any such direction or so far as any such direction does not extend, the Examining Board may regulate its procedure as it thinks fit.

AWARD OF CERTIFICATES AND DIPLOMA

4. The Examining Board, acting for and on behalf of the Institute, may issue a junior certificate to a candidate who has passed the Junior Examination, an intermediate certificate to a candidate who has passed the Intermediate Examination, and a diploma to a candidate who has passed the Diploma Examination :

Provided in each case that the candidate satisfies all the conditions prescribed by the Board for the appropriate examination.

GENERAL REQUIREMENTS

5. (1) The examinations shall be open to candidates of either sex.

(2) Before being eligible to qualify for any certificate or the diploma of the Institute, a candidate shall comply with the following conditions :—

(a) He shall register his name with the Institute :

Provided that no registration shall be effective before the 1st day of January nearest the candidate's sixteenth birthday :

(b) He shall, on registration, furnish evidence that he has secured the Primary School Certificate or a qualification which the Examining Board accepts as an equivalent or higher qualification ; or he shall satisfy the Examining Board that he is competent to proceed with the examinations of the Institute :

FIRST SCHEDULE—*continued*

- (c) He shall submit for the approval of the Examining Board on such occasions as it may require an account, in the form of a diary, of the work in which he has been engaged, and of such other matters of horticultural interest as have engaged his attention :
- (d) He shall satisfy the Examining Board that he has had satisfactory practical experience in horticulture in a garden, including a substantial amount of practical work in horticulture in a garden, for the period prescribed for the examination concerned (herein referred to as practical experience) :

Provided that if the Examining Board considers that the diary submitted by the candidate under paragraph (c) of this subclause is not satisfactory it may require the said period to be extended for such further term as it may determine.

EQUIVALENT STATUS

6. For the purposes of the award of a certificate or a diploma the Examining Board may, in its discretion,—

- (a) Accept a pass in an equivalent or higher examination held by some competent public authority, as equivalent to a pass in the corresponding or a lower examination of the Institute ; or accept a pass in one or more subjects of such an examination as equivalent to a pass in one or more corresponding subjects of the Institute's examinations :
- (b) Waive any of the conditions of the examination if the Examining Board is satisfied that substantially equivalent conditions have been complied with by the candidate.

CONDUCT OF EXAMINATIONS

7. (1) The examinations for the Institute's certificates and diploma shall be held in the month of November in each year at such centres as may be recognized by the Examining Board from year to year as suitable and necessary.

(2) Every candidate for an examination shall give notice of his intention to sit the examination, in such manner as the Examining Board may determine, not later than 31st day of July immediately preceding the examination :

Provided that any application in respect of examinations conducted by the Education Department shall be forwarded to the Director of Education, Wellington C. 1.

EXAMINATION FEES

8. Every candidate for examination in respect of examinations conducted by the Institute shall pay to the Institute a fee of 10s. 6d. for each subject.

SUBJECTS OF EXAMINATION

9. (1) The subjects for the Junior Examination, Intermediate Examination, and Diploma Examination shall be :—

Junior Examination

- (1) General science or chemistry (as prescribed for the School Certificate Examination conducted under regulation 7 of the Education (Post-primary Instruction) Regulations 1945*) :
- (2) Book-keeping :
- (3) Horticultural botany :
- (4) Principles of plant protection :
- (5) Oral and practical examination (stage I) :

Intermediate Examination

- (6) Principles of botanical classification
- (7) Principles of horticulture (stage I) :
- (8) Practice of horticulture (stage I) :
- (9) Special subject No. 1 (selected from those mentioned in subclause (4) of this clause) :
- (10) Oral and practical examination (stage II) :

* Statutory Regulations 1945, Serial number 1945/143, page 342.

FIRST SCHEDULE—*continued**Diploma Examination*

- (11) Principles of horticulture (stage II) :
- (12) Practice of horticulture (stage II) :
- (13) Special subject No. 2 (to be selected from those mentioned in sub-clause (4) of this clause : and may be the same subject as that chosen for the Intermediate Examination) :
- (14) Oral and practical examination (stage III) :
- (15) Thesis.

(2) Notwithstanding anything in subclause (1) of this clause, the subject book-keeping may be deferred and taken as part of the Intermediate Examination at any time before that examination is completed.

(3) The oral and practical examinations at each stage shall be combined, and the oral questions shall be asked mainly about the demonstration, practical operation, and identification performed by the candidate.

(4) The special subjects for the purpose of this clause shall be :—

- (a) Fruit growing :
- (b) The flower garden in all its aspects :
- (c) Trees and shrubs, together with their propagation and use in horticulture :
- (d) Landscape gardening :
- (e) Vegetable growing :
- (f) Nursery management :
- (g) Glasshouse management and crops :
- (h) Horticultural seed production and plant breeding :
- (i) Lawns and playing fields :
- (j) Horticultural mycology :
- (k) Horticultural entomology :
- (l) Systematic botany of families, and genera of the principal horticultural plants.

PASS CONDITIONS

10. (1) A pass in the Junior Examination shall not be awarded until the candidate has passed in all the subjects of that examination other than book-keeping, and has satisfied the Examining Board that he has had two years' satisfactory practical experience in horticulture in a garden :

Provided that the period may be reduced to one year in the case of a candidate who has passed the said School Certificate Examination or an examination which the Examining Board accepts as an equivalent or higher examination, and who was registered not earlier than the 1st day of January nearest his seventeenth birthday.

(2) The subjects general science or chemistry, book-keeping, and horticultural botany may be taken at the examinations held in the month of November next following the registration of the candidate or at any subsequent examination :

Provided that they shall not be taken at the examinations held in the month of November next following the registration of the candidate if the registration was effected later than the 31st day of March in the year in which the examinations are held.

(3) The subject principles of plant protection and the oral and practical examination (stage I) shall not be taken until the period of practical experience referred to in subclause (1) of this clause has been completed.

(4) A pass in the Intermediate Examination shall not be awarded until the candidate has passed all the subjects of that examination, and has satisfied the Examining Board that he has had two years' satisfactory practical experience in horticulture in a garden after passing the Junior Examination, or has had not less than four years in all of such practical experience.

(5) The subjects principles of botanical classification and principles of horticulture (stage I), may be taken at the November examinations following the passing of the Junior Examination or at any examinations thereafter. The subject practice of horticulture (stage I), the special subject No. 1, and the oral and practical examination (stage II), shall not be taken until the practical experience required for the award of an intermediate certificate has been obtained.

(6) A pass in the Diploma Examination shall not be awarded until the candidate has passed all the subjects of that examination, and has satisfied the Examining Board that he has had two years' satisfactory practical experience in horticulture in a garden after passing the Intermediate Examination, or has had not less than six years in all of such practical experience.

FIRST SCHEDULE—*continued*

(7) The subject principles of horticulture (stage II) and the special subject No. 2 may be taken at the November examinations following the passing of the Intermediate Examination or at any examinations thereafter. The subjects practice of horticulture (stage II) and the oral and practical examination (stage III) shall not be taken until the practical experience required for the award of the diploma has been obtained.

(8) Where the required period of practical experience will end not later than the 31st day of March in any year it may be assumed, but only for the purpose of entering for an examination, to have ended on the 31st day of October of the preceding year if the candidate undertakes to continue in his employment till the required period of practical experience is completed.

(9) The thesis for the diploma shall be submitted to the Examining Board not later than the 30th day of September in the year of the examination, and not before the candidate is eligible to be examined in the subject practice of horticulture (stage II) and for the oral and practical examination (stage III).

(10) One or more subjects may be taken at a time, and a candidate may be credited with a pass in one or more subjects.

(11) Notwithstanding the condition laid down in subclauses (5) and (7) of this clause, if a candidate requires only one subject to complete a pass in one of the examinations, he may, if the Examining Board agrees, proceed with those subjects of the next higher examination which he would have been permitted to take had he secured a complete pass in the lower examination, but he shall not be credited with a pass in more than two subjects of the higher examination until he has completed all the requirements for a pass in the lower examination.

(12) 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 the student presenting himself for the examination for the junior or intermediate certificate, or for the diploma, after one of the two years of practical experience prescribed at that stage for the certificate or diploma for which he desires to sit. If, in any such case, the candidate passes the examination, he shall be provisionally recognized as having done so, but the appropriate certificate or diploma shall not be issued until he produces satisfactory evidence of the completion by him of the required period of practical experience.

THESIS

11. 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 the list in subclause (4) of clause 9 of this Schedule, and approved by the Examining Board. The candidate's choice of subject shall be submitted for the approval of 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 also append a bibliography of the subject. The thesis, together with a statutory declaration (in a form obtainable from the Institute) to the effect that it is substantially the candidate's own work, shall be submitted to the Examining Board not later than the 30th day of September in the year 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 Diploma Examination, the Board shall decide whether the thesis shall be approved provisionally or rejected. If it is approved provisionally, the approval shall be confirmed as soon as the candidate has passed the Diploma Examination. The thesis shall be regarded as the property of the candidate, and shall be returned to him.

EXAMINATION OF UNIVERSITY GRADUATES

12. Notwithstanding anything hereinbefore provided, any person holding the degree of Bachelor of Science of the University of New Zealand or any degree or diploma which the Examining Board accepts as equivalent to or higher than that degree shall be eligible to sit for the Diploma Examination if he has passed in botany in the course for the degree or diploma; and

(a) He has completed two years' practical general horticultural training in New Zealand to the satisfaction of the Examining Board; or

FIRST SCHEDULE—*continued*

- (b) He has had not less than four hundred hours working experience to the satisfaction of the Examining Board in horticulture in a garden together with either—
- (i) Not less than two years' experience as a teacher of horticulture or some closely allied subject, including adequate practical work approved by the Examining Board; or
 - (ii) Not less than two years' experience in fruit growing, forestry, seed work, or any other branch of specialized horticulture approved by the Examining Board.

QUALIFICATION FOR EXTRA CERTIFICATES

13. A candidate who has passed the Diploma Examination may qualify for a certificate in respect of any of the special subjects mentioned in subclause (4) of clause 9 of this Schedule other than the special subject in which he passed in the Diploma Examination :

Provided that there shall be a period of at least one year between the passing of the Diploma Examination and the examination for the certificate :

Provided also that only one special subject may be taken in any one year.

NOTIFICATION OF RESULTS

14. Candidates shall be notified of the results of the examinations at the earliest possible opportunity.

PRESCRIPTIONS OF SUBJECTS

15. The prescriptions in the subjects of the examinations shall be as follows :—

Junior Examination(1) *General Science or Chemistry*

The prescriptions for these subjects shall be those for the time being in force for the subjects for the School Certificate Examination conducted under regulation 7 of the Education (Post-primary Instruction) Regulations 1945* :

(2) *Book-keeping*

The recording of straight forward cash and credit transactions in cash book, journal, and ledger; the preparation of a gross revenue and expenditure account, profit and loss account, and balance sheet; the keeping of time sheets and wages book; tax deductions from wages; elementary knowledge of banking, insurance, and general commercial practice :

The standard of the examination shall be approximately that of the Public Service Entrance Examination for 1945 as defined by the Education Department :

(3) *Horticultural Botany*

The candidate shall have had practice in the use of the hand lens and the drawing pencil and shall show a satisfactory elementary knowledge of the following, based on observation and simple experiments :—

- (a) The structure and contents of the living plant cell, with special reference to protoplasm and nucleus; the structure of plants, based on a study of the organs of a typical fern, herb, shrub, and tree; the main life-forms of flowering plants—for example, annuals, biennials, perennials, rhizomatous plants, creeping plants, and climbing plants; and
- (b) Modifications of plant organs for special functions, with particular reference to water and food storage organs, drought resistance, climbers, symbiosis; and
- (c) The processes of nutrition, with special reference to absorption, translocation, and transpiration of water, together with the intake of food materials from the air and soil; carbon assimilation, nitrogen assimilation, and respiration; the elaboration of foods within the plant, especially carbohydrates and proteins, their consumption and storage, and the elimination of waste products; and

* Statutory Regulations 1945, Serial number 1945/143, page 342.

FIRST SCHEDULE—*continued*

- (d) Methods of reproduction, asexual and sexual, with special reference to their importance for plant propagation and plant breeding; and
- (e) The relation of the plant to its environment, including the influence of soils, water, light, temperature, wind; the chief resultant plant formations—for example, forest, scrub, grassland, swamps, with reference to their horticultural significance:

(4) *Principles of Plant Protection*

A general knowledge of the morphology and life history of an eelworm, an earthworm, a wood-louse, an earwig, an aphid, a scale insect, a beetle, a house fly, a moth, and a mite;

A general knowledge of the morphology and life history of a bacterium, a downy mildew, a powdery mildew, a mould, a polypore, an agaric, rusts, and common virus diseases of potato and tomato;

The methods of preparation, strength, 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 control fungous and insect and animal pests;

Glasshouse hygiene and the effects of temperature, humidity, and soil moisture on pest and disease control in glasshouses;

Seed and bulb disinfection by chemicals and by hot-water treatment;

Pests and disease control by hygiene, elimination of weeds, crop rotation, and cultural methods:

(5) *Oral and Practical Examination (Stage I)*

Propagation of plants by seeds, hard-wood and soft-wood cuttings, division, and layering;

Garden tools and implements, including those motor driven, their care and use;

Common operations in the garden—for example, pricking out seedlings, potting up or potting on, use of water-can and hose, wrenching and lining out, digging and trenching, preparation of seed beds, staking and tying plants;

Identification of common pests and diseases, and their control;

Identification of commoner trees, shrubs, and herbaceous plants, including weeds, especially plants indigenous to New Zealand and amenable to cultivation:

Intermediate Examination(6) *Principles of Botanical Classification*

The divisions of the plant kingdom, with special reference to the major distinctions between the following groups—namely, bacteria, algæ, fungi, mosses, liverworts, ferns, gymnosperms, monocotyledons, dicotyledons;

Elementary knowledge of the commoner families of plants met with in horticulture, especially—

Coniferæ	Myrtaceæ
Gramineæ	Umbelliferæ
Amarylhidaceæ	Ericaceæ
Liliaceæ	Primulaceæ
Iridaceæ	Gentianaceæ
Orchidaceæ	Convolvulaceæ
Caryophyllaceæ	Boraginaceæ
Ranunculaceæ	Labiatae
Cruciferae	Solanaceæ
Saxifragaceæ	Scrophulariaceæ
Rosaceæ	Cucurbitaceæ
Leguminosæ	Campanulaceæ
Geraniaceæ	Compositæ

and the recognition of the more important genera of the said families cultivated in gardens:

FIRST SCHEDULE—*continued*(7) *Principles of Horticulture (Stage I)*

Soils : The origin and classification of soils ; their chief constituents and physical properties—for example, their water holding power, heat absorbing power, porosity, capillarity, and texture ; the chemical constituents of soil and of the soil solution ; the functions of sand, clay, and humus in various forms ;

Garden Operations : The principles underlying various operations, the tools and implements used, and their general effect ; digging, trenching, hoeing, cultivating ; preparation of soil for various crops ; drainage in garden, field, and nursery ; mulching, watering ;

Plant Propagation : Structure of stem, root, and seed ; principles underlying propagation by seed, cutting, budding, grafting, layering, subdivision, and by tubers, corms, and bulbs ; conditions necessary for propagation in each case ;

Pruning : The general principles governing the pruning of common plants of all classes and kinds for various purposes :

(8) *Practice of Horticulture (Stage I)*

Operations connected with the soil, including cuts and fills, levels, and grades ;
Drainage of surface and subsoil on hills and flat country ;

Cultural operations for the year in different parts of the country, as regards herbaceous plants, including lawn grasses ;

Propagation, planting, and care (including pruning) of hard-wood plants ;
Glasshouse construction, ventilation, heating, and management ;

Land surveying of areas up to half an acre of moderately level land ; locating objects thereon ; putting in level and grade pegs ;

Garden design, including layout and planting ;

Plant pathology, including spraying, fumigation, and other means of controlling plant diseases and pests :

(9) *Special Subject No. 1*

Chosen from the list of special subjects set out in subclause (4) of clause 9 of this Schedule :

(10) *Oral and Practical Examination (Stage II)*

Propagation of plants by budding, grafting, inarching, and more difficult types of hard-wood cuttings ; also the different types of stocks ;

Pruning and planting trees and shrubs for different purposes ;

Lawns—preparation, sowing, turfing, and maintenance ;

Glasshouse construction and heating ;

Drainage and formation of yards, paths, and drives ;

Identification of pests and diseases ; and their control ;

Identification of trees, shrubs, and other plants, their propagation and use, especially plants indigenous to New Zealand and amenable to cultivation ;

The student should submit for discussion a garden plan, including a planting list :

Diploma Examination(11) *Principles of Horticulture (Stage II)*

The substance of the prescription for the subject principles of horticulture (stage I), and the following :—

Fertilizers and Manures : The physical and chemical properties of the various fertilizers available and of lime ; the method of use and function of each in plant growth and its effect on the soil ; the composition and valuation of fertilizers ; the composition and value of common animal manures ; the manufacture and use of compost ;

Soil biology, with reference to the normal flora and fauna of good loam nitrification and denitrification ; decomposition of humus, and value of leguminous crops ;

Rotation of Crops : Its object and methods, with particular reference to the vegetable garden ;

Plant Breeding : The methods of raising new types and varieties by selection and controlled pollination ;

FIRST SCHEDULE—*continued*

Climate: Relation of heat, light, moisture, and wind to the growth of plants and to the spread and control of pests and disease;

Horticultural Geography of New Zealand: A knowledge of the principal soil types and climatic regions within New Zealand and the plants associated with them; the garden as a plant association:

(12) *Practice of Horticulture (Stage II)*

The substance of the prescription for the subject practice of horticulture (stage I): and the following:—

Trees and shrubs, their planting and management for the production of fruit, timber, shelter, or ornament;

Herbaceous plants, especially those grown for cut flowers, fruit, and vegetables, including selection and seed production;

Glasshouse and frames, the propagation and cultivation of ornamental and food crops therein;

Packing and storing flowers, fruit, and vegetables for sale, transport, or future use;

Land surveying and mapping of areas up to 5 acres; the necessary instruments, their use and care;

Garden design and specification, properly inscribed, showing layout and planting, with specification, including terraces, steps, dry walls, ponds, and rock gardens;

Irrigation and watering systems:

(13) *Special Subject No. 2*

The candidate will be expected to show a deeper and more complete knowledge of the special subject for the Diploma Examination than is required in respect of the special subject in the Intermediate Examination:

(14) *Oral and Practical Examination (Stage III)*

Tree surgery and pruning of specimen and avenue trees;

Acclimatization of plants (including bulbs) from the northern hemisphere and elsewhere;

Storage and packing of fruit and flowers, vegetables, and seeds;

Self-pollination and cross-pollination of flowers;

Instruments and equipment used in survey and mapping small areas, their use and care;

Official soil surveys and their use in horticultural planting and cropping;

Simple estimates in garden construction—for example, amount of soil to raise level of given area, or amount of metal for specified path or road;

Sprays and spraying for control of plant diseases and pests;

Propagation, use, and identification of plants;

The candidate shall submit for discussions an original survey and coloured plan of an existing orchard, or market garden, or private garden of an area of at least 5 acres, 3 acres, and $\frac{1}{2}$ acre respectively, including homestead to scale and properly inscribed:

(15) *Thesis*

As prescribed in clause 11 of this Schedule.

SECOND SCHEDULE

SCHEME OF TRAINING AND EXAMINATION OF CANDIDATES FOR
THE CERTIFICATES AND NATIONAL DIPLOMA IN FRUIT
CULTURE OF THE ROYAL NEW ZEALAND INSTITUTE OF
HORTICULTURE (INCORPORATED)

PRELIMINARY

1. This scheme of training and examination is issued under the authority of the Royal New Zealand Institute of Horticulture Act, 1927, as extended by section 60 of the Statutes Amendment Act, 1946.

SECOND SCHEDULE—*continued*

2. (1) In this scheme, unless the context otherwise requires,—
“Diploma” means the National Diploma in Fruit Culture [N.D.F.C. (N.Z.)] granted by the Institute;
“Intermediate certificate” means the Intermediate Certificate in Fruit Culture granted by the Institute;
“Junior certificate” means the Junior Certificate in Fruit Culture granted by the Institute;
“Orchard” means any commercial or domestic orchard.
- (2) Subject to the provisions of subclause (1) of this clause, unless the context otherwise requires, terms defined in the First Schedule to this order shall, when used in this Schedule, have the meanings assigned to them in that Schedule.

AWARD OF CERTIFICATES AND DIPLOMA

3. The Examining Board, acting for and on behalf of the Institute, may issue a junior certificate to a candidate who has passed the Junior Examination, an intermediate certificate to a candidate who has passed the Intermediate Examination, and a diploma to a candidate who has passed the Diploma Examination:

Provided in each case that the candidate satisfies all the conditions prescribed by the Board for the appropriate examination.

GENERAL REQUIREMENTS

4. (1) The examinations shall be open to candidates of either sex.
(2) Before being eligible to qualify for any certificate or the diploma of the Institute, a candidate shall comply with the following conditions:—

(a) He shall register his name with the Institute:

Provided that no registration shall be effective before the 1st day of January nearest the candidate's sixteenth birthday:

(b) He shall, on registration, furnish evidence that he has secured the Primary School Certificate or a qualification which the Examining Board accepts as an equivalent or higher qualification; or he shall satisfy the Examining Board that he is competent to proceed with the examinations of the Institute:

(c) He shall submit for the approval of the Examining Board on such occasions as it may require an account, in the form of a diary, of the work in which he has been engaged, and of such other matters of horticultural interest as have engaged his attention:

(d) He shall satisfy the Examining Board that he has had satisfactory practical experience in fruit culture in an orchard, including a substantial amount of practical work in fruit culture in an orchard, for the period prescribed for the examination concerned (hereinafter referred to as practical experience):

Provided that if the Examining Board considers that the diary submitted by the candidate under paragraph (c) of this subclause is not satisfactory it may require the said period to be extended for such further term as the Examining Board may determine.

EQUIVALENT STATUS

5. For the purposes of the award of a certificate or a diploma the Examining Board may, in its discretion,—

(a) Accept a pass in an equivalent or higher examination held by some competent public authority as equivalent to a pass in the corresponding or a lower examination of the Institute; or accept a pass in one or more subjects of such an examination as equivalent to a pass in one or more corresponding subjects of the Institute's examinations:

(b) Waive any of the conditions of the examination if the Examining Board is satisfied that substantially equivalent conditions have been complied with by the candidate.

CONDUCT OF EXAMINATIONS

6. (1) The examinations for the Institute's certificates and diploma shall be held in the month of November in each year at such centres as may be recognized by the Examining Board from year to year as suitable and necessary:

SECOND SCHEDULE—*continued*

Provided that, in the case of practical and oral examinations for the certificates and the Diploma in Fruit Culture, sectional, oral, and practical examinations to cover seasonal operations may be held at times and places specified by the Examining Board.

(2) Every candidate for an examination shall give notice of his intention to sit the examination, in such manner as the Examining Board may determine, not later than the 31st day of March preceding the examination :

Provided that any application in respect of examinations conducted by the Education Department shall be forwarded to the Director of Education, Wellington C. 1.

EXAMINATION FEES

7. Every candidate for examination in respect of examinations conducted by the Institute shall pay to the Institute a fee of 10s. 6d. for each subject.

SUBJECTS OF EXAMINATION

8. (1) The subjects for the Junior Examination, Intermediate Examination, and Diploma Examination shall be :—

Junior Examination

- (1) General science or chemistry :
- (2) Principles of horticulture (stage I)
- (3) Horticultural botany :
- (4) Principles of plant protection :
- (5) Practice of horticulture (stage I) :

Intermediate Examination

- (6) Principles of horticulture (stage II) :
- (7) Practice of horticulture (stage II) :
- (8) Principles of fruit culture (stage I) :
- (9) Practice of fruit culture (stage I) :
- (10) Fruit culture oral and practical examination (stage I):

Diploma Examination

- (11) Principles of fruit culture (stage II) :
 - (12) Practice of fruit culture (stage II) :
 - (13) Horticultural economics :
 - (14) Fruit culture oral and practical examination (stage II) :
 - (15) Thesis on a specific branch of fruit growing.
- (2) The oral and practical examinations at each stage shall be combined and the oral questions shall be asked mainly about the demonstration, practical operation, and identification performed by the candidate.

PASS CONDITIONS

9. (1) A pass in the Junior Examination shall not be awarded until the candidate has passed in all the subjects of that examination and has satisfied the Examining Board that he has had two years' satisfactory practical experience in fruit culture in an orchard :

Provided that the period may be reduced to one year in the case of a candidate who has passed the School Certificate Examination or an examination which the Examining Board accepts as an equivalent or higher examination and who has registered not earlier than the 1st day of January nearest his seventeenth birthday.

(2) The subjects general science or chemistry, principles of horticulture (stage I), and horticultural botany may be taken at the examinations held in the month of November next following the registration of the candidate or at any subsequent examination :

Provided that they shall not be taken at the examinations held in the month of November next following the registration of the candidate if the registration was effected later than the 31st day of March in the year in which the examinations are held.

SECOND SCHEDULE—*continued*

(3) The subjects principles of plant protection and practice of horticulture (stage I) shall not be taken until the period of practical experience referred to in subclause (1) of this clause has been completed.

(4) A pass in the Intermediate Examination shall not be awarded until the candidate has passed all the subjects of that examination and has satisfied the Examining Board that he has had two years' satisfactory practical experience in fruit culture in an orchard after passing the Junior Examination, or has had not less than four years in all of such practical experience.

(5) The subjects principles of fruit culture (stage I) and practice of fruit culture (stage I) may be taken at the November examinations following the passing of the Junior Examination or at any examinations thereafter. The subjects principles of horticulture (stage II) and practice of horticulture (stage II), and the oral and practical examination (stage I), shall not be taken until the practical experience referred to in subclause (4) of this clause has been completed.

(6) A pass in the Diploma Examination shall not be awarded until the candidate has passed all the subjects of that examination, and has satisfied the Examining Board that he has had two years' satisfactory practical experience in fruit culture in an orchard after passing the Intermediate Examination, or has had not less than six years in all of such experience.

(7) The subjects principles of fruit culture (stage II) and horticultural economics may be taken at the November Examination following the passing of the Intermediate Examination or at any examination thereafter. The subject practice of fruit culture (stage II) and the fruit culture oral and practical examination (stage II) shall not be taken until the practical experience required for the award of the diploma has been obtained.

(8) Where the required period of practical experience will end not later than the 31st day of March in any year it may be assumed, but only for the purpose of entering for an examination, to have ended on the 31st day of October of the preceding year if the candidate undertakes to continue in his employment until the required period of practical experience is completed.

(9) The thesis for the diploma shall be submitted to the Examining Board not later than the 30th day of September in the year of the examination, and not before the candidate is eligible to be examined in the subject practice of fruit culture (stage II) and for the fruit culture oral and practical examination (stage I).

(10) One or more subjects may be taken at a time, and a candidate may be credited with a pass in one or more subjects.

(11) Notwithstanding the conditions laid down in subclauses (5) and (7) of this clause, if a candidate requires only one subject to complete a pass in one of the examinations, he may, if the Examining Board agrees, proceed with those subjects of the next higher examination which he would have been permitted to take had he secured a complete pass in the lower examination, but he shall not be credited with a pass in more than two subjects of the higher examination until he has completed all the requirements for a pass in the lower examination.

(12) 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 the student presenting himself for the examination for the junior or intermediate certificate, or for the diploma, after one of the two years of practical experience prescribed at that stage for the certificate or diploma for which he desires to sit. If, in any such case, the candidate passes the examination, he shall be provisionally recognized as having done so, but the appropriate certificate or diploma shall not be issued until he produces satisfactory evidence of the completion by him of the required period of practical experience.

THESIS

10. 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, and approved by the Examining Board. The candidate's choice of subject, and the title and headings indicating the scope of the matter to be dealt with in the thesis, shall be submitted for the approval of the Examining Board not

SECOND SCHEDULE—*continued*

less than eight months before the date of examination. In the thesis the candidate shall describe some work actually carried out by him. The credit to be assigned to the thesis shall depend upon the evidence afforded of ability to summarize previous knowledge, to carry out good practical work, and to make independent observations. The thesis, together with a statutory declaration (in a form obtainable from the Institute) to the effect that it is substantially the candidate's own work, shall be submitted to the Examining Board not later than the 30th day of September in the year of the 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 Diploma Examination, the Board shall decide whether the thesis shall be approved provisionally or rejected. If it is approved provisionally, the approval shall be confirmed as soon as the candidate has passed the Diploma Examination. The thesis shall be regarded as the property of the candidate, and shall be returned to him.

EXAMINATION OF UNIVERSITY GRADUATES

11. Notwithstanding anything hereinbefore provided, any person holding the degree of Bachelor of Science of the University of New Zealand or any degree or diploma which the Examining Board accepts as equivalent or higher than that degree shall be eligible to sit for the Diploma Examination, if he has passed in botany in the course for the degree or diploma; and

- (a) He has completed two years' practical general training in fruit culture in an orchard in New Zealand to the satisfaction of the Examining Board; or
- (b) He has working experience in fruit culture for not less than four hundred hours in an orchard together with either not less than two years' experience as a teacher of horticulture or some subject which in the opinion of the Examining Board is closely allied to horticulture, including adequate practical work; or not less than two years' experience in commercial fruit production or in a fruit tree nursery.

NOTIFICATION OF RESULTS

12. Candidates shall be notified of the results of the examinations at the earliest possible opportunity.

PRESCRIPTIONS OF SUBJECTS

Junior Examination

13. (1) The prescriptions in the subjects of this examination shall be those set forth for the subjects in clause 15 of the First Schedule to this order.

Intermediate Examination

(2) The prescriptions in the subjects principles of horticulture (stage II) and practice of horticulture (stage II) of this examination shall be those set forth for the subjects in clause 15 of the First Schedule to this order.

(3) The prescriptions in the other subjects of this examination shall be as follows:—

Principles of Fruit Culture (Stage I)

General principles of—

- Soils, site, and climate for the various types of fruit;
- Drainage and irrigation;
- Propagation, cultivation, arrangement, and planting;
- Manures—composition and uses;
- Hormones and their uses in fruit culture;
- Shelter and frost protection;
- Pruning:

SECOND SCHEDULE—*continued**Practice of Fruit Culture (Stage I)*

Soil preparation and management, including levelling or grading prior to planting;

Grading for irrigation and contour planting;

Drainage of surface and subsoil on slopes and flat country, for the various types of fruit crops;

Cultural operations and methods of soil management in the various districts;

Propagation, planting and care (including pruning) of all types of fruit crops;

Shelter belts;

Soil erosion control;

Land surveying and arrangement of orchard;

Plant pathology—spraying—specifics and uses:

Fruit Culture Oral and Practical Examination (Stage I)

Propagation, grafting, inarching, budding, refurbishing, reworking;

Stocks;

Planting and pruning;

Layout of drainage systems;

Identification of fruit diseases and pests and their control;

The candidate shall submit a plan of an orchard with a planting list for his specific district.

Diploma Examination

(4) Candidates will be expected to display a specialized knowledge of one of the following branches of fruit culture, and a general knowledge of at least two other branches:—

(a) Pip fruit:

(b) Stone fruit:

(c) Citrus and sub-tropical fruits:

(d) Berry fruits:

(e) Grapes.

(5) The prescriptions in the subjects of this examination shall be as follows:—

Principles of Fruit Culture (Stage II)

The substance of the prescription for the subject principles of fruit culture (stage I); and the following:—

Manures—composition of balanced manures for the various crops on different soil types;

Function of elements in plant and fruit production;

Cover crops—value of different types, time of sowing, cultivation, and treatment;

Plant breeding, self-pollination and cross-pollination;

Climate—relation of climate to economic production;

Frost protection;

Irrigation types;

Horticultural geography as for horticulture (stage II), with particular reference to distribution of types of fruit culture in New Zealand and climate and soil types, including official soil surveys and their application in fruit culture with which they are associated;

Storage of fruit;

A knowledge of the regulations governing grading and packing of fruit for local and export markets:

Practice of Fruit Culture (Stage II)

The substance of the prescription for the subject practice of fruit culture (stage I); and the following:—

Fruit trees, their planting and management for commercial fruit production;

Thinning, harvesting, grading, packing, and storage of the various fruit crops;

Shelter belts for particular crops;

Design of packing shed and arrangement of equipment; use and operation of stationary and portable spray outfits;

Implements, tractors, spray equipment, requirements for orchards of various sizes and types;

Estimating of annual requirements of materials for the operation of a specified orchard:

SECOND SCHEDULE—*continued**Horticultural Economics*

- The maintenance of orchard records and accounts ;
- The value of various types of fruit produced in New Zealand in relation to the economy of the country ;
- Marketing of fruit locally and for export ;
- Administrative aspects of fruit culture in New Zealand ;
- Storage ;
- Transport ;
- Cost of production ;
- Valuation of orchards ;

Fruit Culture Oral and Practical Examination (Stage II)

- Thinning, harvesting, grading and packing, storage ;
 - Pruning, reworking, tree surgery ;
 - Spraying, mixing, application ;
 - Identification of diseases and pests and their control ;
 - Identification of varieties and suitability for districts ;
 - Crop estimates ;
- Candidates shall submit for discussion an original survey and plan to scale of an established orchard of the type of fruit in which they are specializing :

Thesis

This should deal with some aspect of the particular type of fruit culture in which the candidate has specialized.

THIRD SCHEDULE

SCHEME OF TRAINING AND EXAMINATION OF CANDIDATES FOR
THE CERTIFICATE IN SCHOOL GARDENING OF THE
ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE
(INCORPORATED)

PRELIMINARY

1. This scheme of training and examination is issued under the authority of the Royal New Zealand Institute of Horticulture Act, 1927, as extended by section 60 of the Statutes Amendment Act, 1946.
2. For the purposes of this scheme, unless the context otherwise requires, terms defined in the First Schedule to this order shall, when used in this Schedule, have the meanings assigned to them in that Schedule.

AWARD OF CERTIFICATE IN SCHOOL GARDENING

3. The Examining Board, acting for and on behalf of the Institute, may issue a certificate in school gardening to a candidate who complies with all the conditions of the examination as hereinafter prescribed.

GENERAL REQUIREMENTS

4. The examination shall be open to candidates of either sex who are teachers, whether full time or part time, in public or private schools, including post-primary schools, or in training colleges, and to itinerant instructors assisting in the teaching of nature study and school gardening.

EQUIVALENT STATUS

5. The Examining Board may in its discretion accept, for the purpose of the award of the certificate, proof of the passing of any examination which it deems equivalent to any of the examinations required in Part A of the examination for a certificate in school gardening.

CONDUCT OF EXAMINATION

6. (1) The examinations for this certificate shall be held in the month of November in each year at such centres as may be recognized by the Examining Board from year to year as suitable and necessary.

(2) Every candidate for an examination shall give notice of his intention to sit the examination, in such manner as the Examining Board may determine, not later than 31st day of July immediately preceding the examination :

Provided that any application in respect of examinations conducted by the Education Department shall be forwarded to the Director of Education,

THIRD SCHEDULE—*continued*

EXAMINATION FEES

7. Every candidate for examination in respect of examinations conducted by the Institute shall pay to the Institute a fee of 10s. 6d. for each subject.

SUBJECTS OF EXAMINATION

8. The subjects of and requirements for the examination for the Certificate in School Gardening shall be—

Part A

(1) General science or chemistry (as prescribed for the School Certificate Examination conducted under regulation 7 of the Education (Post-primary Instruction) Regulations 1945* :

(2) Horticultural botany (as prescribed by clause 15 of the First Schedule to this order) :

(3) Principles of plant protection (as prescribed by clause 15 of the First Schedule to this order) :

(4) Principles of horticulture (stage I) (as prescribed by clause 15 of the First Schedule to this order) :

(5) Practice of horticulture (stage I) (as prescribed by clause 15 of the First Schedule to this order) :

Part B

(6) Oral and practical examination (as prescribed by clause 15 of the First Schedule to this order) :

Part C

(7) The candidate shall supply evidence, supplemented by diary records, that for a period of two years he has either done satisfactory work in charge of a school garden or has been an itinerant instructor in nature study or agriculture :

(8) The candidate shall provide evidence of a detailed study of a particular school gardening problem or investigation.

PASS CONDITIONS

9. (1) The subjects of Part A of the examination for the Certificate in School Gardening may be taken in any order and in any number, and a pass may be granted in one or more subjects at a time :

Provided that a pass shall not be recorded in general science or chemistry unless the candidate has obtained at least 50 per cent of the total marks in the examination.

(2) A candidate may offer himself for examination in Part B of the said examination if he has obtained a complete pass in Part A, or is also offering himself for examination in those subjects of Part A in which he has not been credited with a pass ; but he shall not be credited with a pass in Part B unless he has completed Part A or completes it at the same examination.

(3) No evidence in connection with Part C of the said examination shall be accepted until complete passes in Parts A and B are recorded. The evidence then submitted shall relate to work undertaken within the previous five years.

T. J. SHERRARD,
Clerk of the Executive Council.

* Statutory Regulations 1945, Serial number 1945/143, page 342.

EXPLANATORY NOTE

[*This note is not part of the order, but is intended to indicate its general effect.*]

This order approves and sets out schemes of training and examination for the certificates and diplomas in horticulture, fruit culture, and school gardening granted by the Royal New Zealand Institute of Horticulture (Incorporated).

Issued under the authority of the Regulations Act, 1936.

Date of notification in *Gazette* : 2nd day of August, 1951.

These regulations are administered in the Department of Agriculture.

(Notice No. Ag. 5091.)