

Horticulture

in New Zealand

Bulletin of the Royal New Zealand Institute of Horticulture (Inc.)



Auckland City Council Photo

24

Winter

1982

HORTICULTURE

IN NEW ZEALAND

BULLETIN OF THE ROYAL N.Z. INSTITUTE OF HORTICULTURE
NUMBER 24, WINTER 1982

Editorial	R.A. FOUBISTER	1
Items of Interest from A.G.M.		2
1981/82 Regional Hort. Committee Annual Report		4
Notable and Historic Trees Committee Report		5
R.N.Z.I.H. Examining Board Report		7
District Council News and Reports		11
Diploma and Certificate Awards		17
Chinese Toon Tree	H.B. Redgrove	18

STUDENT SECTION :

Editorial		19
The Babaco	M.I. Spurway	20
N.Z. Horticulture by year 2000.....	Dr. E.G. Bollard	22
Changes to Import Regulations		25
Digitalis Purpurea - Foxglove	R.M. Walker	27
N.Z. Beekeeping in the Eighties		28
N.D.H. Oral & Practical Examinations		30
Nutrient Film Technique		32
Insulation as a Growing Medium		35
Welcome to New Members		36

Cover photo : City Architect's Office,
Auckland City Council.

ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE (INC.)*Patron* : His Excellency the Governor-General*Vice-Patron* : The Hon. Duncan MacIntyre,
Minister of Agriculture & Fisheries*President* : Dr. J.D. Atkinson, OBE, D.Sc., M.Sc., AHRIH*Chairman of Executive* : Mr. J.O. Taylor, MBE, NDH, AHRIH, FIPRA*Chairman of Examining Board* : Dr. R.C. Close, M.Sc., Ph.D.*National Secretary* : Mr. R.A. Foubister
P.O. Box 12, Lincoln College*Annual Journal Editor* : Mr. M. Oates*Bulletin Editor* : This issue, Mr. R.A. Foubister*Students' Editor* : Mr. M.I. Spurway

The Editor welcomes articles, letters and news items for consideration for publication. Contributions should be addressed to the Bulletin Editor. P.O. Box 12, Lincoln College.

Views expressed are not necessarily those of RNZIH.

Registered at Post Office Headquarters, Wellington as a magazine.

~ Editorial ~

We are indeed pleased, and it must be admitted, relieved, to announce the appointment of David Shillito as the new Editor of "Horticulture in New Zealand".

David, who will assume his appointment with the next issue of the Bulletin, is aged 25 and holds both a Lincoln Diploma in Horticulture and a Diploma in Horticultural Management. He commenced his horticultural career with the North Canterbury Hospital Board, and his experience includes a period in commercial flower growing, followed by 18 months with M.A.F. as a Field Officer. He is currently a tutor in Horticulture, Fruit and Vegetables in the Lincoln College Department of Horticulture, Landscape and Parks. With this background, David will bring both knowledge and freshness of youth to the pages of your Bulletin in the future.

While December brings an end to our financial year, it is really May that marks the beginning of the "Institute" year. This is the time of the A.G.M., when new officers are elected, new policies debated, new ideas given an airing, and we embark upon a new year of Institute activities. This May was no exception and the 1982 A.G.M. in Hawera set the pace for 1982/1983.

We are indebted to South Taranaki District Council for their hospitality and their excellent management of this annual function, and as secretary I am pleased to record in this Editorial a sincere vote of thanks to all South Taranakians concerned.

Finally, I would like to record a milestone in the history of R.N.Z.I.H. On 31st May 1982, the Institute officially had 1,059 registered students and for the first time, topped the 1,000 mark in this category of member. We believe that this not only gives recognition to the value of our Certificates and Diplomas, but also indicates a steadily growing interest in horticultural activities and careers on the part of today's young horticulturists. Furthermore, we must recognise these young people as the future backbone of R.N.Z.I.H. and it would be a remission on our part, if we did not make every endeavour to foster and encourage their abilities and interest in things horticultural.

- R.A. FOUBISTER
National Secretary

Items of Interest from the A.G.M. ~

The Chairman, Mr. J.O. Taylor welcomed the 42 members present, who were representative of nine of the twelve District Councils in New Zealand. Apologies were sustained from a further fourteen members and not surprisingly, the three District Councils not represented were those most distant from Hawera - Southland, Otago and Poverty Bay.

An address of welcome was given by His Worship, the Mayor of Hawera, Mr. Murray. It was fitting, he said, that the A.G.M. in Hawera should coincide with the Centennial celebrations of the Borough of Hawera, and he invited all delegates to enjoy their stay. He paid tribute to the civic interest displayed by R.N.Z.I.H. members in South Taranaki, which was evidenced by the high standard of public and private gardens throughout the Borough.

Mr. Taylor enlarged upon his Annual Report (see Bulletin # 23). He emphasised the need for strong membership interest at District Council level, and at the same time expressed grateful appreciation for the work done by District Council Executive members throughout New Zealand.

Annual Accounts

In presenting the Annual Accounts, the Chairman commented on the difficulties faced in the administration of nearly 1,800 general and student members. It was inevitable that membership subscriptions would need to be increased in the future and increases in the proportion of examination costs contributed by students were certain in the light of present governmental funding policies.

Remits

Four remits, all from Northern District Councils, were considered.

Remit No. 1 proposed the formation of a standing committee to deal with urgent business arising between National Executive Meetings. The remit was fully supported in principle and was carried after a minor amendment to the effect that the "wide regional representation" sought in the original remit be amended to "comprising Executive members with power to co-opt on a regional basis as required".

Remit No. 2 recommended that a short meeting of the newly elected National Executive be held immediately after, or during the A.G.M. This remit was acceptable in principle, and was adopted on the basis that such meetings would be held in future provided that a quorum of members was available and that it was possible and practicable to do so.

ITEMS OF INTEREST FROM THE A.G.M. ...

Remit No. 3 expressed concern that no specialist horticultural body was represented on the "Beautiful N.Z." Scheme Co-ordinating Committee and requested that an R.N.Z.I.H. representative be co-opted to this Committee. The remit was carried and already effect had been given to it by National Executive making a request to the Minister of Tourism for such representation.

Remit No. 4 proposed that R.N.Z.I.H. deputises media to give greater importance to amenity horticulture and Mr. P. Jew spoke to the remit, clarifying its meaning and extent. The remit was carried on the basis that the words "and urge" be added to the text of the remit, after "deputise".

A Notice of Motion from National Executive that general membership subscriptions be increased to \$12.50 per annum as from 1 January 1983 was well supported by the Meeting, and on the grounds that an adequate level of income was necessary to meet rising costs of administration and that there had been no increase in subscriptions for the past two years, the motion was carried.

(Editor's Note : Full texts of the Remits presented were published in Bulletin # 23)

Election of Officers

The postal ballot held to elect four members of National Executive to replace those who retired by rotation in 1982, resulted in the re-election of Messrs. I.D. Galloway, A.L. Mason and R.J. Nanson and the election of a new member, Mr. A.G. Jolliffe.

Office bearers for the 1982/1983 year were elected as follows :

Patron	- His Excellency the Governor General
Vice Patron	- The Minister of Agriculture & Fisheries
President	- Dr. J.D. Atkinson
Vice-President	- Mr. T.H. Warburton
Auditors	- McCulloch Menzies & Co, Christchurch

National Executive

Mr. J.O. Taylor	- Chairman
Mrs. M. De Castro	
Mrs. R.W. Shepherd	
Mr. R.J. Ballinger	
Mr. I.D. Galloway	
Mr. G.G. Henderson	
Mr. G.D. Mander	
Mr. A.L. Mason	
Mr. R.J. Nanson	
Prof. R.N. Rowe	
Prof J.A. Veale	
Mr. A.J. Jolliffe	

Presentation of Award - A.H.R.I.H.

Dr. R.W. McKenzie of Havelock North was elected an Associate of Honour and after reading the citation submitted from Miss J.A. Dingley A.H.R.I.H. and Dr. J.D. Atkinson A.H.R.I.H., the Chairman formally presented the Award Certificate to Dr. McKenzie.

ITEMS OF INTEREST FROM THE A.G.M. ...

In reply, Dr. McKenzie acknowledged the honour bestowed upon him and thanked the Institute for its recognition of his contribution to horticulture in this way.

Other items of interest emanating from the A.G.M. were :

An invitation to host the 1983 A.G.M. was received from Auckland District Council, through Mr. B. Buchanan. The weekend of May 20, 21 and 22, 1983 was tentatively accepted as a suitable date and this would be formally confirmed by National Executive at its next Meeting.

Brief mention of the Seed Exchange System within R.N.Z.I.H. membership indicated that this scheme had fallen into abeyance through lack of support.

Student training programmes, at District Council level were discussed and Wellington District Council member, Mrs. B. Brown expressed concern that students' on-the-job practical training was falling short of examination requirements. The problem was recognised by the Examining Board, and Mr. Taylor indicated some of the steps being taken to improve horticultural education generally.

Acknowledgements

At the conclusion of the meeting, Mr. R. Symes paid tribute to the Executive and members of South Taranaki District Council for their part in organising the A.G.M. arrangements. He made particular mention of the work done by Mr. S. Foster and thanked Mrs. Nicholas, Mr. & Mrs. Upson, Mr. McDowell, the Cactus Society, Pukeiti Rhododendron Trust for their part in the floral and other decorative displays.

Conclusion of Meeting

In closing the meeting the Chairman Mr. J.O. Taylor again spoke of the need for strengthening membership interest at all levels, and for full participation in the affairs of the Institute. There was clear evidence that the Institute as a whole was continuing to have influence in horticultural matters and this was particularly noticeable in the area of horticultural education. He thanked all present for their attendance and contributions to the meeting.

1981/82 ANNUAL REPORT REGIONAL HORTICULTURE COMMITTEE

It has not been possible to hold regular meetings as previously, because of the varying times that National Executive has been convened. However, environment matters have been monitored and letters to the appropriate Ministers of the Crown from the RNZIH have been instigated, on your behalf by Regional Horticulture. Progress with the P.E.S. Scheme has been slow but the Scheme has been widened to include the possible introduction and testing of new trees suitable for street planting. It is hoped to develop this aspect in the ensuing year. The possibility of trying to obtain plants of the new species of *Pachystegia* (or Marlborough Daisy) for evaluation is being investigated.

REGIONAL HORTICULTURE REPORT CONT ...

However hard the P.E.S. Committee works there has not been sufficient backup from District Councils and the general membership. This apathy is the concern, not only of Regional Horticulture, but of National Executive members too.

In conclusion I thank all members of Regional Horticulture, P.E.S. and Notable & Historic Trees Committees. You couldn't find a keener team of people anywhere. I would also like to thank John Taylor and Ashley Foubister for help through the year.

Certain proposals to change the nature of Regional Horticulture have been suggested to National Executive. It would seem that as we are at present constituted that we have outgrown the purpose for which it was instituted and the changes suggested would ensure a fairer distribution of the work load as well as extending the publicity and scope of the work previously done by Regional Horticulture. However the P.E.S. Committee and Notable & Historic Trees Committee would still continue.

Once again I wish to thank all members of the above Committees for their loyalty and support not only this year but since the inception of Regional Horticulture seven years ago.

R.W. SHEPHERD,
Chairman,
Regional Horticulture

R.N.Z.I.H. - NOTABLE & HISTORIC TREES COMMITTEE - ANNUAL REPORT

MAY 1982

1. Committee Membership

- (i) Mrs. R.W. Shepherd continues to chair meetings. A new chairperson will be appointed at the end of the year.
- (ii) Mr. Rowe, Secretary/Treasurer, has tendered, and had accepted, his resignation, to take effect at the end of the year.
- (iii) New members welcomed are :
 - Mr. B. Matthews; an arboriculturist employed by the Wellington Parks & Recreation Department.
 - Ms. L. Barrie; who will deal with publicity and promotions.
- (iv) The committee currently comprises :
 - Mrs. R.W. Shepherd (Acting Chairperson)
 - Mr. D. Rowe (Secretary/Treasurer)
 - Ms. L. Barrie
 - Mr. R. Flook
 - Mr. B. Matthews
 - Mr. M. Reece

NOTABLE & HISTORIC TREES COMMITTEE REPORT CONT ...

2. Tree Registration

- (i) Thirty-nine (39) trees/groups of trees are now registered under the scheme.
- (ii) Twenty-eight (28) trees were registered at the same time last year.
- (iii) There are approximately twelve (12) trees whose registration is pending: most of them in Dunedin.
- (iv) The Tree Register is available at this meeting for perusal.

3. Tree Registration Officers

There are Tree Registration Officers operating in the following areas :

North Taranaki	- Mr. G. Fuller
Canterbury	- Mr. W. Fielding-Cottrell
Waikato	- Mr. E.W.E. Butcher
Otago	- Messrs. S. Kemp; N. Struthers
Auckland	- Mr. A. Tagg
Wellington	- Mr. R. Mole
Marlborough	- Mr. B. Soper
Manawatu	- Mr. W. Keereweer
Wairoa	- Mr. B. Teague
Nelson	- Mr. R. Oliver
Whangarei	- Mrs. E.K. Reynolds
Hastings	- Mr. N. Chrisstoffels
Napier	- Mr. S.J. Wheeler
Kapiti	- Mr. M. Cardiff
Greymouth	- Mr. B.E. Berriman
Waimate	- Mr. J.J. Humm

Of the above, Tree Registration Officers have been active, in that applications for registration have been received from them in :

Canterbury; Waikato, Otago, Wellington, Marlborough, Hastings and Kapiti.

The Committee is urgently seeking to appoint a Tree Registration Officer in -

- (i) the Wairarapa, especially since the controversial felling of large trees in Greytown.
- (ii) Taupo.

4. Funds

Funds currently available : Cheque \$356.22
Inv. \$1400.00

National Executive, at its last Wellington meeting, has agreed to fund an additional \$226.00 to cover forecast outgoings for the current financial year.

5. Publicity/Promotions

- (i) Brochures produced for 1981's Conservation Week - very successful. A very good response, in the form of queries.
- (ii) Article in N.Z.I.P.R.A. Journal - no feedback as yet.

NOTABLE & HISTORIC TREES COMMITTEE REPORT CONT ...

(iii) Proposed for this year :

- i Joint Notable & Historic Trees/N.Z. Historic Places Trust brochure.
 - ii Article for "Local Government".
 - iii Press releases
 - iv Letter to all local authorities soliciting support.
6. Supplementary Information Boards
- Ten (10) boards will be produced for trees this year.

7. Summary & Conclusion

There has been an increase in applications for registration which is very heartening. However, at the risk of becoming tedious, I will quote from last year's ANNUAL REPORT :

"It is unfortunately a certainty that this very worthwhile scheme will fail to ever make headway without the assistance of all District Councils and Tree Registration Officers.

This R.N.Z.I.H. scheme is a very worthwhile scheme and the only national scheme aimed at promoting and registering significant trees currently operating. Please support it, all District Councils and Tree Registration Officers".

R.W. SHEPHERD
Acting Chairperson.

R.N.Z.I.H. EXAMINING BOARD ANNUAL REPORT - TO 1982 A.G.M.

Ladies & Gentlemen,

The Examining Board of the R.N.Z.I.H. continues to have an important role in the overall activities of the Institute. This importance can be gauged from the increasing number of students registered with the Institute. Since the last report the Board has met on four occasions and has considered a number of aspects of concern as well as more routine matters. Much time and effort is given freely by Board members and this certainly is appreciated by myself as Chairman and also by the Institute.

In addition to considering matters related to student administration and examinations, the Board has made progress with several aspects :

1. Horticultural Sales Certificate

In 1981, the syllabus and prescriptions for this Certificate were reviewed and a new Approval Notice was prepared. This was then modified by the legal officers in Government. It is expected that the Approval Notice will be gazetted shortly. This means that the course and examinations in 1982 will be based on this Approval Notice.

EXAMINING BOARD ANNUAL REPORT CONT ...

In addition, the Board has had discussions with Horticultural Training Officer of the Agricultural Training Council (A.T.C.) and has made it a requirement that new entrants to nursery retailing should complete a task based training programme. Such a programme has been prepared by the A.T.C.

2. Horticultural Training Committee of A.T.C.

Mr. J.O. Taylor represents the R.N.Z.I.H. and Board on this Committee. To facilitate further co-operation with the A.T.C., Mr. Dudley Brown, Executive Training Officer (Horticulture) was co-opted to the Examining Board at the September 1981 Meeting.

3. Examiners 1981 & 1982

The list of examiners is reviewed annually and various persons have been appointed. The names of suitably qualified persons to assist with the examinations always are welcome to extend the pool of available people.

a) Written examinations - in 1981 a number of new examiners were appointed and all completed their duties conscientiously and competently.

b) Oral and Practical examinations - N.D.H. :
These were held in four locations with the following persons as Moderators :

Auckland	-	J.O. Taylor
Levin	-	J. Hume
Lower Hutt	-	G.G. Henderson
Christchurch	-	G.G. Henderson

c) Oral and Practical examinations - for Certificate in Horticultural Practice.

These examinations were conducted in Tauranga, Hastings and Nelson. Mr. D.W. McCallum was appointed as Moderator and his work has been much appreciated.

4. Budget and Training Officer

In August 1981 a budget application was submitted to the M.A.F. Due to increasing costs associated with inflation and the greater number of students, it was necessary to apply for a larger grant to enable the satisfactory completion of our examination responsibilities.

In addition, a request was made for the funding of a training officer to encourage and assist with the formal education and on-the-job training of R.N.Z.I.H. students.

5. Examining Board Meetings

These are to be held on 6 May and 16 September 1982, and on 20 January 1983, and in general, will be of one day duration. The Meeting on 20 January is to approve examination results. It has proved impossible to complete this task satisfactorily in December.

EXAMINING BOARD ANNUAL REPORT CONT ...

At the February 1982 Meeting of the Board, an Executive Committee was established to consider urgent matters in the interval between Board Meetings.

6. Training Opportunities in Horticulture

At its February 1982 Meeting, the Board initiated a project which has as its aim, the development of a booklet providing details of all the training opportunities available, especially to new entrants to horticulture.

7. Award of Diplomas, Certificates and Prizes

At the February Meeting, the Board approved the award of Diplomas, Certificates and Prizes.

The full list of awards has been published in Bulletin #23 (Autumn 1982), pages 19 and 20. The successful students are to be congratulated.

1981 Examinations

A total of 408 students were examined in the various certificate and diploma options in November 1981. This involved 1054 written subject entries and 61 individual subject examination papers. In addition there were 118 entries for N.D.H. Oral and Practical examinations, 10 entries for H.S.C. Oral & Practical examinations, 5 entries for N.D. Apiculture Oral & Practical examinations and 52 entries for the C.H.P. (Cadet) Oral & Practical examinations.

Written examinations were conducted in 29 separate venues throughout the country and there were 9 centres used for the various Oral and Practical examinations.

Increases in the number of written examinations are not difficult to administer but the steadily increasing number of students reaching the Oral and Practical stages of their studies, poses real problems in physically handling this type of examination. Already both Auckland and Christchurch centres are taking 3 to 4 days to complete all Oral and Practical Schedules, and this time factor will increase in 1983/84.

Student Registrations

Registration of new students has been at the rate of about 200 per year for the past three years. This reflects the growing requirement for a recognised qualification in horticulture in today's economic climate, where competition for employment is most apparent.

After allowing for graduations, de-registrations and withdrawals, total student numbers have risen from 984 in May 1981 to just over 1000 in 1982.

Financial Requirements

The Annual Accounts for 1981 showed a deficit of \$1,177 in the Examinations Account. This situation again demonstrates the need for an increase in Government Grant and an application will

EXAMINING BOARD ANNUAL REPORT CONT ...

be lodged in May 1982 for a per capita increase in relation to students examined and registered.

A Budget forecast for 1982 has been presented to the Examining Board which indicates that a modest surplus will be achieved this year, but much depends on the level of Grant approved by Government in this year of governmental cuts in public expenditure.

Acknowledgements

The work of the Examining Board as always, is supported greatly by those outside concerns and people who give their services voluntarily to the Institute.

The Board expresses its gratitude to the Auckland Regional Authority, The Lower Hutt City Council, the Christchurch City Council and the Levin Horticultural Research Centre for making available, facilities and personnel for the N.D.H. Oral and Practical examinations. We are also grateful to Palmers Garden Centre, Auckland, and Twigland Garden Centre, Upper Hutt for hosting the Horticultural Sales Certificate Oral & Practical examinations, and to the M.A.F. Officers in Oamaru, Gore and Hamilton who so willingly conducted the Apiculture Oral & Practical examinations in those centres.

Thanks are extended also, to the Chairmen and Examiners of Horticultural Cadets in Tauranga, Hastings and Nelson, to Mrs. J Amos, Mr. J.S. Say, Mr. P. Jew, Mr. E. Butcher, Mr. N. Drain, Mr. J. Hume, Mr. D. McCallum, Mr. G. Henderson, Mr. J.O. Taylor, Mr. G. Paterson and the many other people who gave their personal assistance to the Institute's examinations.

Without the support of these people our examinations could not be staged.

RONALD C. CLOSE
Chairman, Examining Board.



District Council News ~

(Editor's note : Because of the omission of District Council News from Bulletin #23 and subsequent receipt of District Council Annual Reports, as well as a number of Newsletters, extracts from both reports and Newsletters are published together in this issue.)

AUCKLAND :

In Memoriam :

Arthur Farnell A.H.R.I.H. died in Auckland last September. He will be remembered as a keen and active member of Auckland Executive, and his interest in native plants, for which he was awarded the Loder Cup in 1965, was nationally recognised. He also received the Plant Raisers Award in 1971 for the Gerbera seed strain "Farnell's All Doubles".

We also regret the loss of another keen member, Mrs. Dorothy Kissling, who died in March this year.

1981 was a busy year, with seven monthly meetings, two spring field trips and a Christmas party in December. Thanks are extended to the speakers who addressed the meetings, to Joy Amos for organising the field trip in October, and to Brian Buchanan for the visit to A.R.A. Botanical Gardens in November.

Members of N.Z.I.P.R.A. were entertained at a function on February 22nd when Dr. David Bellamy was the guest speaker.

Three Regional Meetings were held in Auckland; lists of trees suitable for the Auckland Province were compiled and forwarded to M.A.F. for publication as an Aglink leaflet.

District Council Executive had a busy year; one Notable & Historic Tree - the Kaspar's cabbage tree in the grounds of Mt. Albert Research Centre - was registered. Brian Bennett and Terry Pabthorpe of M.O.W.D. addressed the committee on Motorway Planting, and they will be on the lecture programme later in 1982.

Student classes were held in September and October, to coach candidates for the N.D.H. Oral & Practical examinations which were held at A.R.A. Botanical Gardens in November.

Thanks are extended to Jean Veal and Neil Kitchen for editing and printing the quarterly Newsletters.

Report presented by : MISS J.M. DINGLEY A.H.R.I.H.
Chairman.

BAY OF PLENTY :

Monthly Meetings

Ten monthly meetings were well attended with speakers covering a wide range of topics. Thanks are extended to Mr. Mander, Mr. Henderson, Mr. & Mrs. Hawke, Mrs. Edwards, Mr. Banyard,

DISTRICT COUNCIL NEWS CONT ...

Mr. Barton, Mr. Allan, Mr. Lennard, Mr. Bowyer and Mr. Scott, for sharing their knowledge and experience in the addresses they gave. A vote of thanks is also given to all those members who assisted in one way or another with the monthly meetings.

Flower Shows

The Camellia/Spring Show proved successful but the Rose Show was poorly supported, and showed a financial loss. The Executive is grateful for the assistance given by members who helped with the setting-up, staging, stewarding and recording. Special thanks to Arthur Cross for producing the new show advertising signs.

Open Day

This was held on 6th June at Mrs. Revfiem's property with a demonstration of pruning, use and care of tools, control of pests and diseases, sprays etc.

Field Day

Held on 14th February with visits to the properties of Cowdell's, Dawn Alexander, Mona McNaughton and to the North Island Dahlia Show at Te Puke.

Garden Competitions

These were again run by the Institute for Tauranga City Council and coincided with the City's Centennial Celebrations. The prize-giving at Robbins Park was attended by the Mayor. Thanks to the Judges.

Centennial Planting

This will be carried out during winter months in co-operation with the Parks Department.

Membership

Figures are up, particularly through student members.

A small presentation was made to Daisy Hardwick as a token of appreciation for her years as Secretary.

Officers 1982/1983

Chairman	-	Mr. G.D. Mander
Vice Chairman	-	Mr. D.J. Henderson
Secretary	-	Mrs. J.A. Swinbourn
Treasurer	-	Mr. G.C. Oetiker

Report presented by : MR. G.D. MANDER
Chairman

CANTERBURY :

The Annual General Meeting held on 23rd March 1982, was attended by 29 members, and the Chairman in his annual report referred to the disappointing number of members attending District Council

DISTRICT COUNCIL NEWS CONT ...

functions throughout the year, and called for greater support from members for the activities and events planned for the coming year. Officers elected for 1982/1983 were :

Mr. D. Riach - Chairman
Mr. E.D. Moyle - Secretary
Executive : Messrs. J.O. Taylor, R.A. Edwards,
N. Owers, J. Allen, N. Drain, G. Nind, W. Fielding-
Cotterell, K. Garnett, A. Malcolm and Miss C.
Thornton.

The meeting was concluded by an excellent illustrated address given by Mr. H. Wilson on the Flora of Stewart Island.

A programme of events covering the earlier part of the year was circulated to members in the Summer Bulletin and this is now added to by the following:

COMING EVENTS

- | | |
|----------------------------|---|
| 24 July 1982 - Saturday | 9.30 - 12 noon - Conducted tour of Botanic Gardens, showhouses and propagating department by the Curator.
Meet - Armagh Street car park
9.30 a.m. |
| 25 September 1982-Saturday | Field Trip 9.00 a.m. - 4.30 p.m.
Orton Bradley Park, Charteris Bay.
Mr. Ron Arnold's Garden - Governors Bay.
Car Pool Armagh Street Car Park, 8.30 a.m.
Bring your lunch. |
| 16 October 1982 - Saturday | Field Trip 9.00 a.m. - 12.00 noon.
Conducted tour, Victoria Park.
Identification & plant study.
Leader Mr. W.(Bill) Sykes and
Christchurch City Council.
Car Pool Armagh Street Car Park - 8.30 a.m. |
| Nov/Dec. 1982 - Saturday | Proposed Field Trip to Hororata |

NORTH TARANAKI :

Our membership is around 150 with an increase of twenty in the last year. Monthly meetings are well attended.

The Annual General Meeting in February was followed by a talk by Mr. & Mrs. Proffit on Fuchsias. The March meeting was a panel discussion by members of the Tree Crop Association on nuts and newer varieties of fruits including Babaco and Avocado, undergoing trials in this area. The April meeting was held at Waitara, mainly with a view to giving a number of student members an opportunity to attend. The meeting took the form of a panel discussion with films.

DISTRICT COUNCIL NEWS CONT ...

For the May evening we were treated to a talk with slides, by Mrs. Molly Scrivener, of her trip with the international Dendrology Tour of Australia and Tasmania.

We had representatives at the Institute Annual General Meeting at Hawera in May and we extend congratulations to South Taranaki for the very complete arrangements for the meeting and the entertainment of delegates. Some twenty of our members attended the "Banks Lecture" given by our own Mr. Jack Goodwin.

Our activities include day trips to private and commercial gardens. A busload went for four days to the Kati Kati area where we learned much about the Passionfruit, Citrus, Kiwi fruit and Avocado industries. Several private gardens were visited, some of them having much early history preserved. In contrast, there were in the garden of Mrs. Priest, thriving specimens of Cassia in full flower, Leucadendron, Macadamia, Bougainvillia etc. planted no more than five years ago.

Some of the other places of interest visited were a collection of 1,200 dressed dolls, the Martha Hill mine area, Water Lily Gardens, Bird Gardens, Mineral and Gem Stone exhibition and a Garden Centre and Gift Shop.

Along with other parts of the country there was a very low rainfall in summer and autumn. Time alone will show how this season's near drought will affect next season's flowering trees and fruit crops.

OTAGO :

This has been an unusual year, in that at least two of our planned meetings have had to be cancelled owing to the inclement weather. However we have had several really worthwhile and interesting talks and demonstrations.

The first Saturday in August was to have been a tree planting experience - to beautify alongside the new Southern Motorway outlet; but, owing to heavy rain this was cancelled.

Our Spring meeting - early October - took place in warm sunshine and was attended by an enthusiastic public. Our two speakers - Mr. N. Richan and Mr. N. Struthers explained and demonstrated the preparation and planting of a vegetable garden and the use of fertilizers and manures. The venue was in the vegetable garden in the upper Botanic Gardens.

The December 5th outing was again cancelled because of wet weather. It had been arranged to have an instructive walk to Mt. Cargill via Bethunes Gully - to study the native trees and shrubs on the way. This was to have concluded with a picnic barbecue - a few of our more hardy members did complete the walk despite the weather.

The Information Centre in the Upper Botanic Gardens was officially opened on Saturday 24 April 1982. This is unique for our area and will be a much used venue for the development

DISTRICT COUNCIL NEWS CONT ...

and extension for Botanical Education. Societies such as ours will use the building for our area meetings and planned programmes.

I wish to extend my thanks to our Secretary Robert Scott, for his dedicated services throughout the year. The committee has met regularly each month and good progress has been made in various areas - particularly with the Historic and Notable Trees. Mr. Struthers our Tree Officer continues a lot of research into these trees and we congratulate him.

Report presented by : MRS. P. RICHAN
President.

POVERTY BAY :

The Poverty Bay Horticultural Society continues to maintain its liaison with R.N.Z.I.H. and we are most appreciative of the items of interest submitted to the Bulletin by way of your Newsletters. Editor.

Surely we have a sense of pleasure in seeing our city's lovely lawns as we cross the main bridges. In the heart of any city such space is seldom found. With visitors' comments on Gisborne beauty, we should as individual citizens contribute by our own gardens and verges being colourful and neat. This year we will not be holding a City Garden Competition but are revising our thoughts on this matter and will later have a different approach.

We would like to extend to the Floral Art Society our congratulations on their three-day Festival in March. Preparations began two years ago and their thought, planning and work earned them great credit for the interesting and beautiful effects. We look forward to seeing more of this talent at the Chrysanthemum Show after Easter.

As I write we are saddened by the news of the loss of an eminent floral worker and friend of so many - Mrs. Edna Tietjen.

SOUTH TARANAKI :

The National Conference has come and gone. It was quite a memorable occasion and our visitors left feeling their time was well spent. There have been several letters expressing thanks and appreciation of our efforts to provide for the comforts and pleasure of the Delegates.

Out thanks go to the Registrar, Mr. Syme, to Mr. Chamberlain, the Conference Treasurer, to Mrs. Nicholas whose golden arrangements brought sunshine to the Conference surroundings and who escorted a garden visiting party round the district, and to Mrs. Shirley Bourke for her interesting introductions of mountain flora to the members of the party who enjoyed at visit to Dawson's Falls on the Sunday.

As well as escorting the mountain party the President and Mr. Syme saw to it that the visitors had the added opportunity of viewing the district's attractions - the parks, the Kiwi Dairy

DISTRICT COUNCIL NEWS CONT ...

Complex, the natural gas site, the Lactose factory and the Ammonia-Urea project under construction.

The Banks Lecture, on the Saturday evening, given by the retired Superintendent of Parks and Reserves, New Plymouth, Mr. J. Goodwin, attracted a reasonably good attendance of members and visitors who appreciated the speaker's thoughtful discourse and enjoyed his excellent colour slides to the full.

It was altogether a rewarding occasion for the South Taranaki District Council and we like to think that Hawera was a happy choice of venue for the first such Conference to be held away from a city.

WELLINGTON :

This is the first newsletter of the year and probably you will be wondering why it has been so long in coming. Well, things have been moving behind the scenes. Firstly, the student meetings have been started for this year with a full programme of meetings, practical demonstrations and field trips to local areas for plant identification etc. Meetings are held twice monthly with an average of twenty students taking advantage of this excellent course.

Secondly, the executive has been concerned for some time at the lack of attendance at evening meetings. After much discussion of this problem it was generally agreed that the Institute was not a viable alternative to specialist societies. This raised the question of what the role of the Institute should be. So the executive decided that a sub-committee be formed to recommend what course the Wellington branch should follow. Their decision was to hold meetings to cater for the professional horticulturists at a central venue in Wellington in the early evening, using the same venue on a regular basis. The first Monday of the month was chosen but where public holidays intervene then it will be held on the first Tuesday of the month instead.

We plan to start with an evening meeting, with Ross Jackson, landscape architect to the 'Beautiful New Zealand' secretariat, as the first speaker.

WHANGAREI :

The guest speaker at the March meeting was Mrs. Allo accompanied and assisted by her husband. Originally a Whangarei boy, Mr. Allo went on to achieve a degree in Agricultural Science. It was as an Advisory Officer in this field that he was invited to go to Taiwan for three years and then to go back for another three. In all, living and working in a foreign country for six and a half years gives an insight and an understanding of that land and its people.

Mr. Allo gave us a very clear word picture of life in Taiwan. In spite of the small size of the island and of its arable land, the 16 - perhaps by now 18 million people live and work here

happily. The climatic range is considerable, from cool temperate to tropical, as shown by the plants described by Mrs. Allo. In the north, Camellias, Roses, Chrysanthemums, in the south many beautiful palms and even Royal Poinciana, *Delonix regia*. Gardens as we know them here do not exist, and this was something she missed greatly, said Mrs. Allo. The public parks use gracious landscapes rather than formal bright flower beds. The one exception was one park with formal beds of *Calendula* and *Petunia*. Plants are grown in pots, but mostly these, in private properties, are behind fences, and so not on view. On festive occasions several large floral discs, on easels, are displayed on the pavement in front of shops. The bush areas on the mountainsides looked fascinating.

The Taiwanese have imported many plants but their native flora has contributed also to the gardens of the world. Several *Cymbidium* orchids, *Pleione* orchid, *Lilium formosum* are all native of Taiwan. *Prunus campanulata*, Taiwan cherry, does very well in Northland.

Congratulations ~

Congratulations are extended to the following recipients of awards, who were either omitted from the list in Bulletin #23, or to whom awards have subsequently been made.

NATIONAL DIPLOMA IN HORTICULTURE (NURSERY MANAGEMENT)

Mr. S. E. Parr - Tokoroa

NATIONAL CERTIFICATE IN HORTICULTURE (FIRST SCHEDULE)

Mr. T. D. Canton - Lower Hutt
Mr. J.L. Stevenson - Auckland

NATIONAL CERTIFICATE IN HORTICULTURE (SECOND SCHEDULE - FRUIT)

Mr. J.F. Lelieveld - Hamilton

HORTICULTURAL SALESMAN'S CERTIFICATE

Mr. R. Shelton - New Plymouth
Mr. C.J. Solomon - Upper Hutt
Mr. T. Lucero - Petone
Miss J. Shields - Otaki
Mr. G.M. Jensen - Hamilton
Mrs. L.N. McInnes - Papatoetoe
Mr. C.S. Newton - Hamilton
Mr. C.P. Rix - Howick
Mr. G.G. Rossiter - Hamilton
Mrs. M.E. Trotter - Auckland.

CHINESE TOON TREE

- *Cedrela sinensis* 'Flamingo'

by

HUGH REDGROVE

The pink foliated form of this Chinese tree first appeared in a few Auckland gardens in the early 1950's, since when it has been propagated by offsets and root cuttings until the trees are now a familiar sight when the rich pink foliage first opens in October. After two or three weeks display the primate foliage gradually turns to cream and finally to green. The growth habit is erect to 6 m.



This pink foliated form is well known in Australia and it may well be that this clone originated there. But it is not known or described in any literature from the Northern Hemisphere. Only very recently have young plants been sent to Britain, and I have personally sent one to the R.H.S. Gardens at Wisley.

Having discussed proposals for a cultivar name with several nurserymen, I now propose the name 'Flamingo' and I am advising the N.Z. Nurserymen's Association accordingly.

I have communicated with Dr.D.M. Churchill, Government Botanist and Director at Melbourne Botanical Gardens. He advises me that there has not been any cultivar name used in Australia, and he approves of the name now suggested.

For the various reference works (except E.E. Lord) there is no mention of pink foliage so that it is safe to assume that 'Flamingo' is only available in Australasia. The new cultivar name should assist nurserymen to take advantage of the export opportunities.

STUDENTS'

SECTION



AGATHIS AUSTRALIS

EDITORIAL

Having successfully searched around for items to fill the following 17 pages of this bulletin it is still the task of writing a few words for the editorial that I am most daunted by.

These cold winter months provide a perfect opportunity to sit in front of the ~~T.V.~~ fire and do those infinite T.C.I. assignments. Better still, how about getting your pen to paper and writing a short article to publish in the students' section. It does not have to be a literary masterpiece; perhaps some item of news or observation that you consider may be of interest to fellow horticulturists. Even a copy of an interesting article you have read would be most welcome.

So far I have received only one letter from out of 1,000 R.N.Z.I.H. students, so please, if you have any articles of interest or comments they would be most appreciated.

- Merv Spurway

THE BABACO

by

M. I. Spurway

(Based on articles from The Orchardist of New Zealand February 1978, March 1981 by Dick Endt, Auckland.)

The babaco recently reached commercial production in New Zealand with sales in Auckland markets.

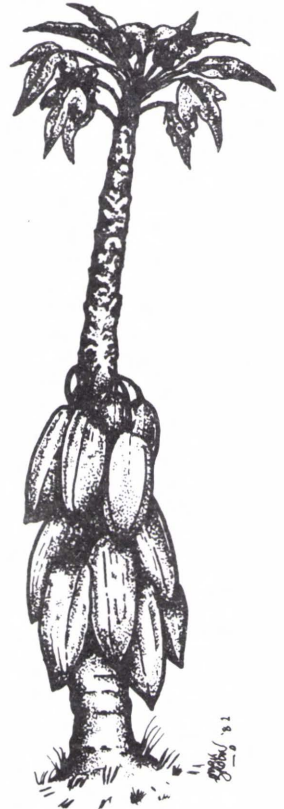
Description

The babaco belongs to the papaya family, *Caricaceae*, and is a hybrid species, closely related to the tropical pawpaw.

It is a slender single-stemmed perennial herbaceous shrub or tree, reaching a height of 2 metres or so. The 5 angled fruit is yellow when ripe, normally about 30 centimetres in length and 10 centimetres across. They are borne on long stalks on the trunk of the tree, producing 25 to 35 fruits each season. The fruits weigh as much as 1 kilogram or more. Fruits set parthenocarpically, meaning there are no seeds in the fruits so that the plants must be propagated by cuttings.

They are best eaten fresh when fully ripe. The flavour has been described as a blend of strawberry, pineapple and pawpaw.

The babaco thrives in high mountainous regions of Ecuador at a preferred altitude of between 2000 and 3000 metres. The climate in northern New Zealand is similar and so the frost free, subtropical fruitgrowing regions of Northland, Auckland and Bay of Plenty are suitable areas for production.



The Babaco

History

Botanically the babaco is of recent discovery. It was first described by the Swedish botanist Heilborn in 1921. The first few plants were introduced into New Zealand late in 1973 by the D.S.I.R. More plants were brought into the country in 1977 by Mr Dick Endt of Oratia, Auckland. Several more trips to South America were necessary to collect plant material because of the poor survival rate of cuttings during importation as well as destruction of some survivors because of virus infection symptoms. The slowness of propagation and the total lack of technical information has meant that a completely new concept of culture had to be devised.

Early plantings have been made and these should be evaluated as a basis for future large scale production. Projected tonnage is from 40 to 45 tonnes to the hectare at a spacing density of 3000 trees to the hectare. Recent prices paid for babacos in Auckland have been as high as \$4.00 each, however it is expected there will be a levelling off to about \$1.00 to \$2.00 each as quantities increase.

Production

Babacos require good fertile soil, wind protection and adequate rainfall or irrigation.

Prior to planting in spring the soil should be well worked and fertilised. Plants are spaced at least 1.5 metres apart.

Growth is rapid and flower formation occurs as the single trunk grows. Any shoots formed around the base are removed. A second shoot is allowed to develop from about March and although it grows rapidly it will not initiate flower buds. It is not recommended to crop one trunk for more than 1 or 2 years.

The flowers, usually solitary on the end of a long pendulous stalk, arise from every leaf axil. The young fruit set and grow immediately after flowering, reaching full-size 2 months before maturity.

During the cold winter months the leaves of the babaco degenerate and usually all the leaves are shed by the time the earliest fruits mature.

The fruit is harvested from October to December when fruit show first signs of the yellow colouration.

After the dormant season, during December, trees are pruned to encourage new shoots and the trunk that bore the current season's fruit is cut back to the stump, to the point where the second shoot was left the previous year. This second shoot will then take a primary function. Overseas information indicates that the economic life of the tree is about 8 years.

The babaco shows promise as a new commercial crop but only the future will tell if the horticulturists of New Zealand can make a success of it.

HOW N.Z. HORTICULTURE WILL LOOK BY YEAR 2000 -

A SCIENTIST'S VIEWPOINT

by

Dr E.G. Bollard,

(Reprinted from 'Fruit and Produce', February 1982.)

What will New Zealand Horticulture be like in the year 2000? Dr E.G. Bollard, former Director of the Horticulture and Processing Division, DSIR, Auckland, attempts to answer this question in the following article taken from a departmental publication, "Prospects for Horticulture: A Research Viewpoint", of which he was the author.

Dr Bollard invites the reader to imagine that he is writing about the way horticulture may have progressed over the next 20 years as if he were writing about it in the year 2000. This is what he says:-

The Development of Horticulture Over the Last 20 Years.

The increase in New Zealand's population to 4 million has meant a steady improvement in sales of horticultural produce on the home market, but this has been small compared with the expansion in horticultural exports. The growth in exports has occurred across the whole field of horticulture, but to differing extents for different products.

Fresh fruit is still the major horticultural export and, as in 1980, pip fruit and kiwifruit are by far the largest components. Kiwifruit first headed pip fruit as our single most valuable export crop in 1983, and it has since retained this lead even though pip fruit exports have expanded considerably.

Spreading Harvest

Hayward is still the most widely planted variety of kiwifruit, although several other varieties are now accepted for export and are rapidly approaching Hayward in production. In addition to providing diversity on the market, these new varieties assist the industry by spreading the harvesting season.

Granny Smith is still a popular apple, but the development of the Asian market has resulted in major plantings of red varieties, old and new. Especially popular now are the red varieties selected in the mid-1980s with the Asian market particularly in mind. The Asian market is also now taking considerable quantities of persimmons and nashi.

The new selections of tamarillos and feijoas have been successful as dessert fruits on overseas markets since the mid-1980s. In addition, a number of other subtropical species are now well established on smaller, more select, markets.

More Citrus

Berryfruit and stonefruit have continued to expand in a less spectacular way. Citrus fruit production has grown following the acceptance on overseas markets of those forms - particularly New Zealand grapefruit and tangelos - which are well adapted to our growing conditions. Exports of grapes have been helped by the introduction of Japanese varieties.

Among vegetables, onions are still a most important fresh export, while others, such as asparagus and squash, are approaching them in value. The outstanding development with vegetables, however, has been the growth of exports of a wide range of other kinds: this includes standard types such as kumaras and globe artichokes, besides a number of other species of Asian origin.

Blended Products

Freezing has remained the standard technique for processing many fruits and vegetables. The introduction of concentration procedures for both juices and pulps has allowed development of export markets for these products. The techniques of drying have become much more sophisticated, with minimal use of energy.

The introduction of blended fruit products - juice concentrates, nectars, leathers - particularly those involving kiwifruit and some of the less common subtropical species - has led to a growth in some quite distinctive export products.

The wide range of vegetable species now being grown for fresh use is reflected in an increased range of processed products. New Zealand wines - particularly some still white wines of special character - are now featured regularly in overseas stores and restaurants.

Plants & Flowers

Growth in the export of seeds, bulbs and plants has been based to some extent on the local development of new varieties by the large number of semi-amateur breeders. Domestication of endemic New Zealand species has provided a range of distinct house and garden plants now being widely exported. Our ability to regulate flowering in several of these makes them particularly valuable commodities.

The total value of exports in 2000 and the way this is built up is shown in the following table.

VALUE OF HORTICULTURAL EXPORTS FROM NEW ZEALAND IN 2000
(\$ million, expressed in 1980 dollars)

<i>Fresh fruit</i>		
Kiwifruit	550	
Pip fruit	350	
Miscellaneous subtropicals	20	
Stone fruit	10	
Berryfruit	10	
Citrus fruit	10	
Grapes	<u>5</u>	955

<i>Processed fruit</i>		
Frozen fruits	95	
Concentrated pulps	30	
Canned fruits	20	
Dried fruits	10	
Fruit juices	15	
Wine	15	
Jams and conserves	5	190
<i>Fresh vegetables</i>		
Onions	60	
Asparagus	30	
Squash	30	
Miscellaneous	100	220
<i>Processed vegetables</i>		
Frozen vegetables	125	
Dried vegetables	40	
Canned vegetables	10	175
<i>Seeds, plants and flowers</i>		
Horticultural seeds	10	
Bulbs	10	
Plants	25	
Flowers and foliage	15	
		1600

Source: One man's contemplation

Horticultural production is now much more evenly spread geographically throughout the country. Taranaki, Waikato, Wanganui and Manawatu are now prominent horticultural districts. Canterbury and Otago have expanded in the production of certain fruit crops, old and new - apricots, sweet and sour cherries, prunes, red apples, nashi. Some of the newer Asian root vegetables are well adapted to conditions in the south. Northland has developed a unique role as a producer of a number of subtropical species, some of them small but particularly valuable lines.

Mechanisation

Mechanisation has been introduced at many levels into horticultural production. Colour grading and sizing are now done electronically and packing and other handling is completely mechanised. Flexible, integrated production lines, in which the harvested crop is graded, fumigated, treated, waxed, cooled and packed as required, are a recent development.

Perhaps the most significant event of the past 20 years was the realisation early in the 1980s of the supreme importance of transport in our developing horticultural export trade. Conventional shipping could carry some fresh products safely to the other side of the world, but our ability to sell a wide range of other fresh produce was inhibited by both distance and the infrequency of shipping.

Airships for cargo

New Zealanders were slow to appreciate that we had a unique problem, because of our geographical location, which we would largely have to solve ourselves. This realisation led at last to activity in which the design of containers, ventilation and cooling methods, and so on, were all reassessed for our particular needs. The introduction of controlled atmosphere methods in shipping containers was a major step forward.

However, the adaptation of the airship to commercial transport in the early 1990s was the vital step. Already, in 1981 the cost of operation of jet aeroplanes was becoming prohibitive for all but the most valuable produce, but at that time airships were on the verge of becoming commercial - craft which could then carry about four times the cargo of a jumbo jet, at a fraction of the cost, at a speed of 120-150 km/hour.

Interest expressed by Air New Zealand led to the development of prototypes particularly suited to the company's role as a Pacific carrier, and that airline became the first to initiate commercial cargo-airship services in recent times. This has led to a major development in the export of fresh produce from New Zealand to many destinations in Asia and the Pacific.

It is our ability to produce quality products from the land, however, which remains the foundation of New Zealand's horticultural industry.

Although moves by large commercial organisations into horticulture have meant the development of some large production units, the smaller single-family unit is still highly important.

In some instances, pastoral farmers are growing horticultural plants as one component of their operation, but, in general, horticultural enterprises are specialist operations. The smaller 5-10 ha units have increased their contribution to horticulture. Some are managed as production units, often producing specialist crops; others are semi-hobby units in which people carry out plant breeding or selection on a variety of crops.

CHANGES TO IMPORT REGULATIONS

by

*Plant Health and Diagnostic Station,
Ministry of Agriculture and Fisheries, Levin,
January 1982.*

Quarantine limits on nursery stock imports.

Since the introduction of the first comprehensive plant quarantine regulations in 1952 New Zealand has maintained a limit on the amount of nursery stock that may be imported, on the basis that the risk of introducing pests and disease increases with the quantity of material imported, and large consignments are difficult to inspect.

Examples of current limits for one importer are; low risk (mainly indoor) plants - 5,000 units per genus with a maximum of 10,000 units in quarantine at any one time; chrysanthemums - 2,000 cuttings in quarantine at any one time with a total annual limit of 1,000 plants; most other genera are limited to 1,000 units per year.

This system has some anomalies; in particular the fact that it may be permissible to import 1,000 units (say) of each of five different genera but it is not permissible to import 5,000 units of the same genus, although the quarantine risk of the latter may be lower. The Ministry has therefore reviewed these limits and has decided to replace the generic restrictions with a total limit per consignment irrespective of genera, provided this can be done without significantly increasing the quarantine risk and provided the importer has adequate quarantine premises. In practice this means:

(a) Low risk plants; no change except individual consignments (i.e. each import permit) will not exceed 5,000 small/young nursery grown units that must be certified as having been raised in a soilless medium, with a maximum of 10,000 units in quarantine at any one time.

(b) Orchids for commercial cut flower production; a maximum of 10,000 plants in quarantine, imported in stages. A first consignment of 2,000 young/small nursery grown plants may be imported which, if found free from pest and disease during the first month after arrival, may be followed by a further 3,000 plants from the same supplier. Providing the second consignment is found healthy on arrival a further 5,000 plants may be imported from the same supplier to the maximum of 10,000 plants. The minimum quarantine period for consignments in excess of 1,000 plants will be five months.

In both the above situations imported nursery stock must be:

- (a) dipped in an insecticide before export.
- (b) grown in quarantine in a suitable greenhouse or aphid-proof screenhouse in accordance with current isolation requirements.

If consignments of imported plants are quarantined in the same house, the first consignment must remain in quarantine until the last is ready for release.

The families/genera of plants currently regarded as low risk, and size limitations on imported orchids are available from the Ministry who reserve the right to reduce these limits without notice should this become necessary for plant health reasons.

These amended limits will not be extended to plants known to present a significant disease risk, or to plants intended to be grown in quarantine in the open unless numbers in excess of 1,000 per genus are first fumigated with methyl bromide at the importer's risk.

The Ministry will consider suggestions for including other genera within one or other of these groups provided investigation reveals no significant quarantine risk.

There will be no change in the limits or procedure for importing normally prohibited plants such as pip and stone-fruits, grapes, most berryfruits, many conifers and potatoes.

DIGITALIS PURPUREA

FOXGLOVE

by

R.M. Walker, N.D.H. Student.

Introduction

Digitalis is latin for finger. Foxglove is also called folk's glove, fairies' glove and fairies' thimbles, all being derived from the shape of the flowers.

Digitalis belongs to the family Scrophulariaceae, of which there are about 20 species.

This marvellous plant is a biennial herb and grows extremely well in a shady position with plenty of water and organic matter. They seem to like the cooler climates, so Christchurch is ideal and there is no reason for it not to be grown more often.

Culture

Seed is sown in early autumn or young plants may be bought and set out in their permanent position. Great rosettes of woolly, grey-green leaves (similar to comfrey) are formed during the autumn and winter then in spring and summer each plant will send up a 1-3 metre simple spike with brilliant bell-shaped flowers up to 5cm long in shades varying from mauve to white, with dark purple spots edged with white within.

Most people know that they are poisonous, and they leave them well alone; perhaps this is why such a beautiful plant is still common.

A large variety of different forms are now being produced for the home garden display including annuals like D. purpurea 'Gloxiniaeflora' which blooms about five months after sowing with a spike that colours up at about 50cm and fills up with blooms, finally reaching 1m.

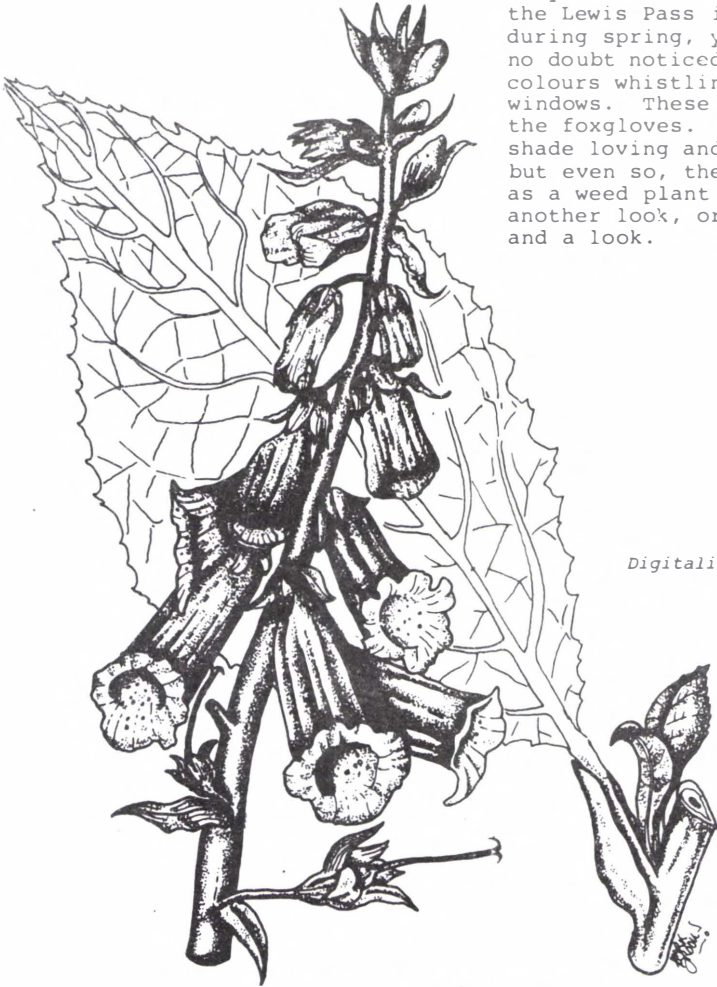
The perennial forms available are rather useful for the 'cottage garden look' and for the lower maintenance enthusiast. These all vary in height, some branching, so careful choosing is recommended if these rather interesting and definitely showy plants are to be used in the border or damp shady spot.

Medicinal Foxgloves

Foxglove was unknown to the early Greeks and Romans as a medicine. The English herbalists were the first with this plant. It was included in the 'British Pharmacopoeia' way back in the 17th Century.

The drug from the leaves has the same use today as way back then for heart affections. Its oldest use was as a poultice on swellings. The drug 'digitalis' is found in both the leaves and the seeds and Digoxin is formed by lengthy chemical processes. This is used after cardiac surgery to strengthen and regulate the heart.

If you've ever driven through the Lewis Pass in Canterbury during spring, you will have no doubt noticed the amazing colours whistling past the car windows. These are for sure, the foxgloves. So much for shade loving and grass feeders, but even so, their naturalisation as a weed plant certainly warrants another look, or even a stop and a look.



Digitalis purpurea

NEW ZEALAND BEEKEEPING IN THE EIGHTIES

(from The Apiarist March/April 1981)

New Zealand's internal honey marketing situation appears to be heading for a very difficult time in the near future. Returns for export bulk honey have been relatively stable for some years.

Although world production has fallen a little, and consumption is rising steadily, prices are not rising, as this is offset by the emergence of China as an exporting nation which is boosting world honey available for export by 5% per annum.

China is also receiving export concessions on exports to the U.S.A., and is now supplying over 73% of Japan's honey imports. They are now the world's number one exporters, and to gain new markets, are offering honey at substantially below world prices.

Private packers are obviously doing well as there is little competition. Because of the HMA situation there is much legarthy - the staff have no security, and would-be private packers are marking time until the situation is resolved.

Already the market is being affected by small-time, or part-time producers hawking honey direct to shops at prices below those of HMA, or commercial packers. As a result, packers reduce the price they are offering close to that of the HMA, the HMA loses the local market and has only the overseas business. In a short time the price level in New Zealand becomes based on the overseas returns and the only apparent remedy is another seals levy.

A tough time is predicted unless we can get some equalisation scheme in New Zealand, as otherwise the total realisation will be based on the lowest common denominator, at the moment the market price for one to two thousand tonnes annually of surplus honey. This would be a disaster in this age, as the beekeeper would become the ham in the sandwich, squeezed between increasing costs and decreasing returns.

Also, the domestic market is close to oversupply, and already some large agreements have apparently been made at lower prices than the HMA's recommended prices. It must be obvious that price-wise we cannot expect any substantial increases either at home or abroad.

Shipping and production cost increases have meant that, lately, in-tank returns for bulk honey have been substantially lower in real terms than for a number of years. This year has also been the first for ten years that has seen overseas prices lower than domestic prices.

Prior to 1971-72, for a very long time, overseas sales realised less than local sales, except in a price cutting situation. A long period of this state was only survived by beekeepers due to the imposition of a seals levy. This levy was basically used as an equalisation fund to subsidise exporters, and protect the local market from being flooded, with the result of prices reverting to the overseas base.

When in 1971-72 the overseas market improved greatly yielding significantly higher than domestic prices, individuals wanted to export bulk honey.

The right to do this was gained about three years ago, with a maximum of 150 tonnes per annum stipulated, and no more than two containers per shipment. The latest information is that no private person has done so, and with a changed situation, where nett overseas realisations are once again lower than local, the HMA is the only organisation exporting bulk honey, and at relatively low prices, which will need to be propped up by the higher returns from the local market and/or reserves. This condition cannot continue for long.

With the increase in transport and drum costs, the return on exported bulk is now below 90 cents/kg 'in-tank' price, based on current European values of around \$1300 per tonne. Local producer/packers in the South Island are paying \$1.15/kg and in the North Island up to \$1.40/kg. The HMA price list shows it to be getting almost \$2.00/kg on the local market.

N.D.H. ORAL AND PRACTICAL EXAMINATIONS

To give students sitting their first oral and practical examination an idea of what to expect, a copy of the 1981 N.D.H. (First Schedule) Oral and Practical I has been printed.

The examination is divided into 2 papers, morning and afternoon, each 3 hours long. Approximately half an hour is allowed for each question. Similar type examinations are set for the other Schedules.

There is normally one examiner for each question and students move on to the next question when the specified time is up. The examiners are looking for good craftsmanship so be efficient and tidy with your work and don't be afraid to discuss your techniques with them. Remember it is a practical examination, if you don't dazzle them with your craftsmanship you probably won't baffle them with your theory.

Practise some of the basic horticultural operations before the examination such as: seed sowing, preparing cuttings, pricking out seedlings, preparing a small plot of land for planting as well as knowing common pests, diseases, weeds and plants.

Finally, try to relax and enjoy the oral and practical. Best of luck, and don't forget your diary.

NATIONAL DIPLOMA IN HORTICULTURE - SCHEDULE I

SUBJECT NO. 9 - ORAL AND PRACTICAL

Morning Paper

Time allowed - 3 hours

- NOTE:
- (a) All questions must be attempted.
 - (b) If you require materials or tools not provided, ask the Examiner for items required.
 - (c) BRIEF details are sufficient when giving written answers to the questions. Practical work carries more marks than written answers.
 - (d) In all cases, your code and question number must be clearly attached to all groups of plants, plot and written material.
 - (e) Operations should be carried out as in good gardening practice.
-

1. Prepare the plot allocated to you as a vegetable garden.

With the tools and equipment provided, mark out the plot and make it ready for the sowing and planting of the seeds and plants provided.

(20 marks)

2. On your prepared plot:

(a) Sow two rows of each of the seeds provided. Leave one row of each uncovered.

(b) Plant two rows of each of the plants provided.

(25 marks)

3. Prepare a tray with the materials provided and sow the seed provided.

(a) Leave one half of the sown area uncovered.

(b) Discuss with the Examiner the treatment you would give and indicate at what stage the seedlings should be pricked out.

(20 marks)

4. Prepare a tray with growing medium provided and prick out the seedlings indicated.

Answer any questions put to you by the Examiner on problems arising in raising bedding plants.

(20 marks)

5. With material provided make ten hardwood cuttings. Five of each.

Insert the cuttings at the end of your garden plot as in the case of an open-ground cutting bed.

(15 marks)

SUBJECT NO. 9 - ORAL AND PRACTICAL

Afternoon Paper

Time allowed - 3 hours

6. Identify any TEN of the specimens displayed. For each give the full botanical name, common name (if any), country of origin and use in horticulture.

(25 marks)

7. Identify the pest, disease or disorder on any FIVE of the seven specimens provided. For each, give details of any measures which may be taken to control the problem or which could have prevented its development.

Answer any questions put to you.

(20 marks)

8. Discuss with the Examiner the use, care, servicing, maintenance and operation of the tools and equipment shown to you.

(15 marks)

9. With the materials provided, stake the plants provided.

Discuss with the Examiner the reasons for staking, materials used and answer any questions put to you about staking plants.

(20 marks)

10. Make FIVE cuttings from each of the propagating materials provided.

Insert them in a suitable container in the medium provided.

Discuss with the Examiner the various rooting media which can be used and the conditions which should be provided until the cuttings have rooted and are ready for moving on.

(20 marks)

NUTRIENT FILM TECHNIQUE

by

M.I. Spurway, Lincoln College.

Recently there has been growing interest in what is seen as the first commercially viable form of water culture - nutrient film technique cropping.

Introduction

Nutrient-film technique crop production (commonly known as NFT cropping) devised at the Glasshouse Crops Research Institute, U.K., is a method of growing in which the plants have their roots in a shallow stream of recirculating water in which is dissolved all the elements required. There is no solid rooting medium.

As knowledge of the root environment increased, particular attention was given to improving soil drainage, aeration, water retention and nutrient supply. This at first led to soil improvement by the addition of bulky organic manures or peat, and subsequently to widespread replacement of the soil by soilless substrates such as sawdust, until it seemed logical to consider eliminating the solid substrate altogether.

NFT cropping overcomes two major problems associated with crop production by water culture. The thick root mat which develops is common to all plants in the row so the plants are stable and this overcomes the problem of crop anchorage. Secondly the upper surface of the root mat, although moist, is in the air and this ensures a permanent supply of oxygen.

While both research and commercial production have centred primarily on the tomato crop, the nutrient film technique has also been successfully applied to cucumbers, lettuce and strawberry production and appears to have application for a wide range of other crops.

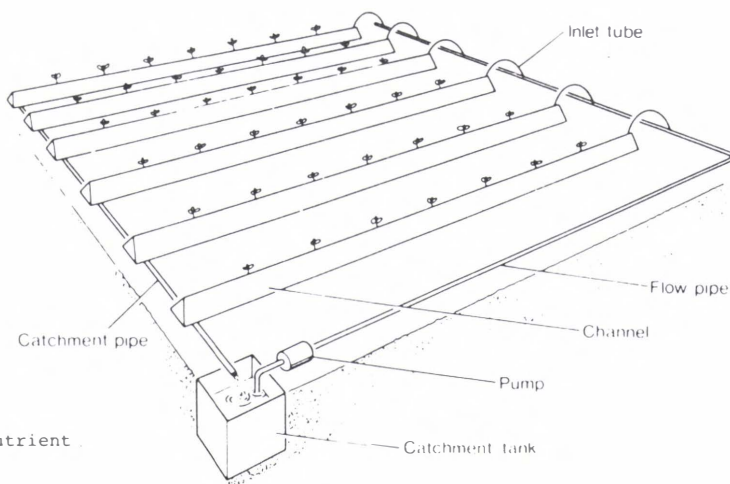
Layout

Plants are placed parallel in polythene film channels on a sloping surface; nutrient solution is pumped into the upper ends of the channels, and flows past the plant roots, returning under gravity to a catchment tank at the lowest point in the system.

The primary aim is to ensure that the flowing solution is as shallow as possible, because deep solutions are less aerated by contact with the air, and it is generally recommended that the slope of the channels should be not less than 1 in 100, or even 1 in 75. The channels are wide enough to avoid any build-up of deep solutions (e.g. 250mm for tomatoes, and 300mm for cucumbers) and are not normally more than 20m long. The channels are clipped or stapled across the top at intervals to exclude light and thus limit the growth of green algae. The crops are supported aeri-ally in a conventional manner.

The channels may be discharged directly into a catchment trench along the lowest side of the layout with a polythene supply pipe connected to the circulating pump so that the water from the trench is delivered to the inlet (i.e. the upper) ends of the channels. A small bore polythene tube delivers the water from the supply pipe into each channel.

If it is desirable not to have a trench but merely a small tank at the lowest corner of the setup, then the NFT channels are discharged into a catchment pipe which, in turn, discharges into the small tank. A direct return pipe is inserted into the supply pipe near the circulating pump.



Layout of the Nutrient Film Technique

Nutrition

Experiments have shown there is a wide tolerance of nutrient levels by plants grown with NFT although fairly high concentrations are generally used since they provide a considerable reserve of nutrients within the system, as well as reducing the problems in monitoring low concentrations of essential nutrients.

A typical nutrient solution for tomato production could contain in ppm 150-200N, 50P, 200-400K, 40-50Mg, 150-300Ca, 3-5Fe, 0.5-Mn, 0.3B, 0.1Cu, 0.1Zn and 0.05Mo. Such figures are, of course, only a general guide as crop needs vary considerably.

The concentration and composition of the solution changes constantly with time, depending on the amount of water taken up by the plants and lost by evaporation, and on the differential uptake of nutrients from the solution.

Samples of the nutrient solution are taken periodically for chemical analysis since the salinity controller only maintains total salt concentration irrespective of a nutrient balance. Major nutrients are normally determined every 2 to 3 weeks and trace elements every 4 to 5 weeks. Nutrients are made up in 2 separate concentrated solutions, one containing the calcium nitrate, and the other the rest of the essential elements, in order to prevent precipitation before the solutions are added to the circulating water.

Sensors monitor the electrical conductivity and pH of the solution in the catchment tank or at the outlet side of the circulating pump. The conductivity electrodes are connected to a controller which operates twin injection pumps when the total salinity falls, thus adding each of the 2 connected nutrient solutions. The pH electrode system is similarly connected to a controller which operates a corrosion-resistant pump to add the dilute acid when the pH rises above the pre-set value (usually 5.8-6.0).

For small scale installations the basic system can be operated manually using a portable conductivity meter to monitor the salinity of the solution. Additional nutrients are then added in small quantities from day to day in order to maintain an electrical conductivity of 2.5-3.0 millisiemen/cm. The pH is maintained by small additions of acid.

Precautions

For major installations, safeguards must be provided against failures such as a spare circulating pump and standby generator. All plastic materials used in the system should be free from phytotoxic components, and no copper, brass or galvanized iron fittings should be in contact with the nutrient solution.

When NFT was first introduced commercially many people feared that if root diseases gained entry, they would spread rapidly throughout the system. Trials with tomatoes have shown that diseases appear to be no more prevalent in NFT than in substrates such as peat or soil. Many other crops have been tried in NFT without encountering disease problems although some plants do appear to be more susceptible than others. However a combination of resistant varieties (where they are available), a high degree of hygiene, and suitable chemical treatments can help to overcome such problems.

Conclusions

The greatest disadvantage with nutrient film technique cropping is the high initial capital cost in setting up the system, as well as the high level of technical knowledge and skill required to manage it.

Advantages, however, include the constant control over the root environment in terms of pH, temperature and nutrient supply. The need for watering is eliminated. Preparation of the system between successive crops is simple compared to production in other substrates. Finally, there have been indications of higher yields compared to those obtained from conventional methods.

References

- COOPER A.J. 1974: Soil? Who needs it? (Part 2). American Vegetable Grower 22 (9) : 13 and 64.
COOPER A.J. 1979: The ABC of NFT. Grower Books.
COOPER A.J. 1974: Hardy nursery stock production in nutrient film. The Grower 81, 877-878.
MAXWELL M.K. 1978: Hydroponics - Soilless Culture. Australian Parks and Recreation, August, 17-21.
WINSOR G.W. 1980: Progress in Nutrient Film Culture. Span 7-9.

INSULATION AS A GROWING MEDIUM

(From Commercial Horticulture, November 1981)

High yields of tomatoes and cucumbers are being obtained at a British horticultural research station by growing the plants in an inert insulation material called rockwool.

Rockwool is produced from basalt at high temperatures then treated with additives to make it water absorbent for horticultural use.

In a range of experiments carried out in 1980 at Stockbridge House experimental horticultural station, at Cawood, Yorkshire, tomatoes yielded 247 tonnes/ha and cucumbers averaged 100 a plant.

The tomatoes are grown on a long layering system with the suspension hook moved along the overhead wire as the plants grow beyond the initial six or so trusses to an eventual 25 trusses.

The cucumbers grow up to the suspension wire as a single main shoot. They are then allowed to develop fruiting side shoots in a cascading umbrella posture of growth.

Some of the polythene-wrapped long rockwool slabs have been used a second year. With these, tomatoes had to be stopped at 247 tonnes/ha in mid-August when further growth was still possible.

Welcome

to the following new members :

Mr. & Mrs. D. Proffit, New Plymouth
Mrs. P. C. Chapman, Auckland
Mr. & Mrs. H. Horner, New Plymouth
Mr. J. P. Martin, Wellington
Mr. P. R. Chamberlain, Tauranga
P. W. Banks, Wellington
Ms. W. M. Davison, Hastings
K. F. Poppelwell, Huntly
T. P. Solomona, Rarotonga
D. B. Mapson, Cambridge
Ms. J. A. Biss, Hamilton
L. A. Gray, Palmerston N.
Mrs. M. D. Hoare, Te Puke
M. H. Marquet, Christchurch
D. J. Potts, Hastings
M. A. Simmons, Auckland
B. Allchurch, Christchurch
R. G. Ayto, Hastings
J. P. Bretherton, Hastings
G. A. Caphill, Auckland
R. B. Douglas, Te Awamutu
T. J. L. Foote, Christchurch
G. J. McPherson, Palmerston N.
Miss B. Schar, Hamilton
Ms. N. J. Adam, Auckland
K. F. Budd, Wellington
S. Faleafaga, Wellington
J. A. Gavin, Hamilton
W. R. Hustler, Matawai
J. M. Johnston, Whangarei
Ms. S. Mecredy, Auckland
Ms. R. T. Munro, Levin
Ms. K. A. Pamplin, Mangere East
Ms. N. L. Pope, Carterton
R. N. Reynolds, Te Puke
I. W. Robertson, Invercargill
B. P. Stock, Taupo
N. J. Tregerthan, Auckland
Ms. K. M. Wano, Edgecumbe
P. J. McGavin, Colville
M. B. McLeary, Morrinsville
T. J. Meadows, Cromwell
Ms. S. M. Petersen, Whenuapai
Ms. S. C. Taylor, Christchurch
G. P. Hampton, Auckland
L. D. Hoare, Te Puke
S. G. Ingham, Auckland
W. T. McDougal, Otago
Mr. G. Oetiker, Tauranga
Miss A. M. Arts, Nelson
Ms. J. Deans, Wellington
Mrs. P. L. Mann, Eltham
Auckland Reg. Botanic Gdns.
S. R. Currie, Hamilton
A. G. McDermott, Waitara
Ms. S. A. Schwalger, Hastings
D. J. Sampson, New Plymouth
Ms. A. Aucamp, Auckland
K. A. Burgisser, Hawera
Ms. V. J. Hall, Northland
Ms. R. L. McInnes, Auckland
Ms. S. J. O'Malley, Napier
S. J. Richardson, Dunedin
D. N. B. Whyte, Auckland
P. G. Andrews, Auckland
G. C. Barnett, Christchurch
Ms. R. F. S. Browne, Morrinsville
Ms. A. J. Cooper, Geraldine
Ms. S. A. Fogden, Tauranga
L. C. Hibbs, Auckland
Ms. J. S. Overmars, Christchurch
A. R. Tate, Tauranga
G. J. Bowler, Hawkes Bay
R. M. Campbell, Auckland
Ms. N. J. Fleming, Christchurch
W. H. Gibson, Mosgiel
Ms. S. K. Hughan, New Plymouth
P. J. Lissington, Palmerston N.
Ms. M. G. Moreton, Auckland
Ms. R. M. O'Connor, Christchurch
A. C. Perrott, Te Awamutu
N. J. Ramage, Timaru
Ms. C. Y. Robertson, New Plymouth
P. M. Robertson, Hamilton
Ms. S. M. Trappitt, Christchurch
R. G. Vincent, Horowhenua
M. J. Williams, Upper Hutt
Ms. S. C. McLay, Auckland
Ms. J. M. McNeill, Christchurch
Ms. R. A. O'Neill, Hamilton
Ms. B. H. Shepherd, Thames
Ms. R. A. Gardiner, Christchurch
S. J. Hardwick, Christchurch
Mrs. S. T. Horne, Rotorua
Ms. K. M. James, Dunedin
K. M. Armstrong, Auckland

Space in this issue does not permit publication of the names of all the 178 new members enrolled since the last issue of the Bulletin. Names not listed above will appear in Bulletin #25.

Editor.

DISTRICT COUNCIL SECRETARIES

AUCKLAND :

Mrs. S. Davison,
7 Wapiti Avenue,
AUCKLAND 3.

POVERTY BAY :

Poverty Bay Hort. Society,
P.O. Box 1275,
GISBORNE (Liaison only)

BAY OF PLENTY :

Mrs. J.A. Swinbourn
12 Tilby Drive,
Matua,
TAURANGA

SOUTHLAND :

Mr. G.A.R. Petrie, AHRIH,
64B Clifton Street,
INVERCARGILL

CANTERBURY :

Mr. E.D. Moyle,
6 Winslow Street,
CHRISTCHURCH 5

SOUTH TARANAKI :

Miss E.A. Free,
23 Egmont Street,
HAWERA

MANAWATU :

Dr. E.O. Campbell, FRIH,
26 Frederick Street,
PALMERSTON NORTH

WAIKATO :

C/- Mr. F. Dorofaeff,
Ruakura Ag. Research Centre,
Private Bag,
HAMILTON

NORTH TARANAKI :

Mrs. Marie Ward,
52 Lyn Street,
NEW PLYMOUTH

WELLINGTON :

Mrs. Diane Menzies, FRIH
7 Huia Road, Days Bay,
Eastbourne, WELLINGTON

OTAGO :

Mr. R.M. Scott,
P.O. Box 5045,
DUNEDIN

WHANGAREI :

Mr. K. Young, FRIH
P.O. Box 1530
WHANGAREI

RNZIH Notable & Historic Trees Committee - P.O. Box 11-379,
WELLINGTON

RNZIH Regional Horticulture Sub-Committee - P.O. Box 11-379,
WELLINGTON

ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE (INC.)

Annual Subscription rates : (Subscription year ends 31 Dec.)

General Members and Fellows	\$10.00
Husband/Wife Joint Membership	\$13.50
Small non-commercial societies	\$10.00
Firms, companies (commercial)	\$10.00
National non-commercial societies	\$20.00
National commercial organisations	\$40.00

Subscriptions should be sent to : the Secretary, RNZIH,
P.O. Box 12, Lincoln College,
Canterbury

Get in touch with your District Secretary and become involved
with local RNZIH affairs.

