FROM THE CHAIRMAN'S DESK...

The last few months haven't been easy for the Institute, with the resignation in January of the Executive Officer, Sherryll Wilson. Her replacement, Rodger McCarthy, took up the position in late February. In a small organisation like ours, changes like this are disruptive, and I'm grateful to Enid Reeves and Vicki Black who ran the office during the absence of an Executive Officer.

National Executive has also suffered, with the resignation of two members since the last A.G.M. Whilst the loss of these members is regretted, it does open up opportunities for other members to become involved in Institute affairs at a national level. To survive, we need to attract younger people and get them involved at all levels. This is already happening and I'd like to talk briefly about the work of two of our younger members; Peter Heenan and Chris Ferkins.

Peter Heenan won the inaugural Sir Victor Davies Award in 1990, and is a recognised authority on the cultivation of New Zealand plants. About 18 months ago he became involved in the preparation of a checklist of cultivar names of the genus *Phormium* for the Institute (who are the International Registration authority for this genus). In January he completed this major task and produced a draft booklet. It is hoped to publish this booklet later this year, the first in a series of checklists of native plant cultivars.

Chris Ferkins has been involved with the Notable Trees Committee for several years, and is currently Chairman. He has been very active in promoting the Scheme, and has spent a lot of time following up new registrations around the country. He is currently working on the application of the Scheme to areas of indigenous vegetation.

Both of these people are committed to this work and both have put many hours of their own time into the Institute. The future of the Institute depends on people like Peter and Chris.

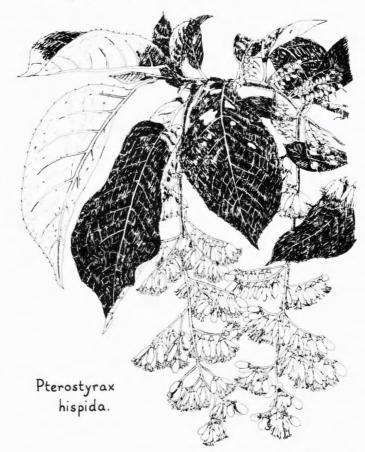
Mike Oates

New Executive Officer - Rodger McCarthy

A new Executive Officer has been appointed to replace Sherryll Wilson, who resigned in late 1990.

The National Executive takes pleasure in welcoming Rodger McCarthy to the Institute. Rodger has a horticultural background gained whilst with D.S.I.R. as Administration Officer in the Nelson region, and latterly has been involved with the Department of Education Polytechnic/College of Education Capital Works Building Programmes and most recently as Finance Officer for a Christchurch Education Service Centre. The appointment is initially for twelve months.

National Executive would also like to thank Sherryll Wilson for her considerable input and effort during her tenure as Executive Officer.



This handsome spreading deciduous tree is a native of East Asia. It's fragrant white flowers are borne in beautiful pendant racemes under the branches, making an impressive display. The flowers are fragrant, and are slightly downy with protruding stamens. Pterosyrax hispida prefers a sunny situation, sheltered from strong winds and a rich wamy site. In cultivation it will reach about eight metres high and twice that in the wild. It is an ideal specimen tree for a section, young trees can be raised from the seed which are sprindle-shaped, five-ribbed and densely hairy. The common name is Epaulette Tree.

Drawing courtesy of lan McDowell

NATIONAL EXECUTIVE NEWS

The last meeting was held at Head Office on 31 January. Items of interest include:-

- Finalisation of the conditions of the DD Baker Memorial Award. The Award will be launched at the AGM in Auckland when applications will be called for.
- Closing dates for award applications have been standardised as follows:
 Associates of Honour, Fellows, Plant Raisers Award 1 November
 Sir Victor Davies and DD Baker Awards 28 February
- It was agreed that the Institute had a responsibility to publish the checklist of cultivars of the genus *Phormium* compiled by Peter Heenan. Sources of finance are being investigated.
- Concern was raised about the lack of plant knowledge amongst landscape architecture graduates. The Institute has approached Lincoln University to discuss the matter with teaching staff.
- The Institute is coordinating a review of horticultural education from school through to university level in conjunction with the New Zealand Qualifications Authority.
- A promotional drive has been launched to inform secondary school horticulture teachers about the Institute and its publications. Copies of journals are to be sent out to schools with a covering letter and application forms.

NEW ZEALAND GUARDIAN TRUST CO. LTD

TEMPLIN TRAVELLING SCHOLAR-SHIPS IN ENGINEERING & HORTICULTURE

The New Zealand Guardian Trust Co. Ltd, as Trustee of the John Richard Templin Travelling Scholarship Trust, is calling for applications from Engineering graduates of the University of Canterbury and Horticulture or Botany graduates of Lincoln University, or graduates who have obtained a National Diploma of The Royal NZ Institute of Horticulture through the Reserves Department of the Christchurch City Council.

Total funds available for scholarships this year is up to US\$100,000. Any recipient must complete study in the United States of America or Canada, and scholarships are tenable for one year.

Application forms are available from: Mr Kelvin Glenn NZ Guardian Trust Co. Ltd PO Box 9 CHRISTCHURCH Applications close 1 May 1991.

RNZIH ANNUAL GENERAL MEETING Auckland University 18th - 19th May 1991

see details enclosed

NEWSLETTER DEADLINES

June 7th 6th September 29th November

In the December issue of the RNZIH Newsletter the Joint Membership subscription fee should have had the word "each" printed, i.e.

C) Joint Membership (for two people sharing the same household) \$49.00 each

LODER CUP AWARD 1991

Nominations are again being sought for the Loder Cup Award for 1991.

The Award is open to any person, Association, Society, Firm, Company, Local Body, or body of persons (whether corporate or incorporate) nominated by persons and bodies, including the RNZIH.

The Cup is awarded to any properly nominated person or organisation who, or which, is considered by the Committee to have excelled all other nominees in furthering the aims and objects of the donor of the Cup. The object is: "...for lovers of nature in New Zealand to encourage the protection and cultivation of the Incomparable flora of the Dominion".

The winner of the Cup for 1990 was Dr Brian Molloy of Christchurch. NOMINATIONS FOR 1991 CLOSE ON 30 JUNE 1991.

For further information please contact Rodger McCarthy, Executive Officer of the RNZIH.

- 1. Planning for the 1991 Garden History Seminar to be run as part of the Institute Conference on May 18th, is proceeding well. Susan Clunie, Historic Places Trust gardener (Pompallier); Marleen Boyd, DSIR Librarian (Mt Albert); and Sue Bulmer, Archaeologist, Department of Conservation have all been approached to speak. Progress on the Auckland Garden History Society's historic garden survey project will be described and discussed.
- The 1990 Australian Garden History Conference was reported in their two recent newsletters: Volume 2, No. 3 (Nov/Dec), and Volume 2, No. 4 (Jan/ Feb). The text of papers presented at Albury, N.S.W. in October last year include "Natives in the Nineteenth Century Garden" by John Foster, "National Estate Gardens - Their Past and Future" by Juliet Ramsey. The latter paper announces the publication by the Federal Australian Heritage Commission (G.P.O. Box 1567, Canberra, A.C.T.) of two reports, available from the Commission, seeking public comment, titled "A Guide for Preparing Garden Nominations for Entry to the Register of the National Estate", and "Parks, Gardens and Special Trees; a Classification and Assessment Method for the Register of the National Estate." Gardening News (Oct/Nov 1990) published in Victoria, reports the addition of four private and two public gardens entered on the interim list of the National Estate Register for Victoria.
- 3. PROVINCIAL ROUNDUP DUNEDIN:- I understand Robin Bagley continues to make progress with her research on early gardens and horticulturists.

CHRISTCHURCH:- The Edmonds Factory gardens were compromised with the loss of the Factory Building in October. Christine Dann and Tony Wyber's "Cottage Gardening in New Zealand" has just been published - see the very good book review by Charlie Challenger in The NZ Listener for 24 December (p126-127).

WELLINGTON:- The Wellington District Council organised three very successful Historic Garden Seminars during spring. Sir Truby King's garden "Melrose" in Newtown was visited in

September. The Wellington City Council bought the house designed I believe by W. Gray Young, Architect, who has written on "Architectural Gardening" (see Journal of Proceedings of NZ Institute of Architects, Oct 1916). A draft conservation plan has been prepared by landscape consultants for the 1.9ha rambling garden, featuring extensive brickwork. The site of Mason's garden in Avalon was visited with assistance from Lower Hutt City Council's Park Operation Division. During November the Premier's House, 260 Tinakori Road, Thorndon (the Prime Minister's residence) was to be visited. See the feature in NZ Home and Building (Oct/ Nov 1990). This magazine reported that "tenders were being called to restore the gardens to its former splendour..."

AUCKLAND:- Two conferences were held during late February and early March, with a number of prominent local and Australian horticultural and landscape preservationists presenting lectures.

The Rotorua Government Gardens draft Management Plan has received some publicity during the Christmas holidays, with a proposal by the Historic Places Trust to classify the gardens as a historic area, according to the NZ Herald (5th January).

4. Mike Calnan, Garden Advisor to the National Trust in Britain, recently departed these shores after a sixweek visit sponsored by the Winston Churchill Memorial Trust. He pre-

- sented an illustrated lecture about his work and the National Trust's current major project to conserve Stowe gardens and landscape (near Buckingham) to a well attended function held at the Auckland Regional Botanic Gardens, attended by members of the Institute, Friends of the Garden and Garden History Society.
- 5. Winsome Shepherd is currently preparing an essay on gardener and nurseryman, David Hay (1816 1884), of Auckland, after the Wellington District Council raised its concern about the lack of significant horticulturists in Volume One of "The New Zealand History of Biography".
- 6. John Morris, a former Director of the National Trust of N.S.W., and an experienced heritage tour leader along with horticultural guide, Tom Garnett, will lead a 16 day tour for the Australian Garden History Society to New Zealand, from 14 to 29 April. The tour commences in the South Island. Tom Garnett owns "St Erth" at Blackwood, Victoria, and writes the regular column "Letters from the Country" for the Melbourne Age. For details and brochure if interested in joining the tour, contact Ralph Levenson, Travelworks NZ Ltd, PO Box 28440, Auckland 5. PH (09) 5220330.
- 7. The New Zealand Historic Places
 Trust Magazine reports in the December
 issue that a regular feature in future
 magazines will include "coverage of oldstyle gardens ... aimed particularly at
 those who wish to give an old building an
 authentic setting."

The Garden History Scene International

We have received an interesting 75 page catalogue of an exhibition held at the Hugh M. Morris Library of the University of Delaware between June and September 1990.

The catalogue titled "Suitable for cultivation: Horticultural Collections at the University of Delaware Library" details the extensive historical Horticultural Collections held in the Unidel History of Horticulture and Landscape

Architecture Collection that was established in 1969.

The catalogue is divided into seven chapters, including: Practical Horticulture and Gardening, Fruit and Vegetables, Flowers and Floriculture, The Seed and Nursery Trade, Landscape Architecture and Botanical Sciences.

To borrow the catalogue, contact John Adam, 5a Athens Rd, Onehunga, Auckland 6.

HORTICULTURAL COMMERCE

Report to the National Executive

by John Williams

With the results of the trading year now known for the two major export earning sectors of horticulture, it must be recognised that factors outside the strict environment of the New Zealand economy have largely influenced pipfruit and kiwifruit during the year ending December 1990.

PIPFRUIT

The pipfruit growers receive what amounts to a 70% advance payment from the New Zealand Apple and Pear Marketing Board a fortnight after submission of fruit during the season with a further 30% guaranteed during July. This payment is based on expected market returns by variety and there is no further payment guaranteed beyond the initial 79% advance.

In order to reduce the cost of funding the Board's seasonal finance the 70% advance will be progressively reduced to 50% over the next three years. Having experienced two difficult years when some varieties did not receive the full 30% in addition to the advance payment many growers were finding it very difficult to maintain a manageable cash flow. The exception were growers whose orchards consisted only of the new premium varieties such as Braeburn, Royal Gala, and Fuji.

To compare returns from the price schedule, the highest paying size of Red Delicious were listed in the 1990 schedule at \$6.34 while Braeburn were \$14.82, Royal Gala \$14.01, and Fuji \$17.43 per export carton.

In 1991 there are three classes of growers; old established growers who have not restructured their orchards to newer varieties, those who have taken steps to replace or plant out new blocks of premium varieties often increasing borrowings, and those who have only new orchards consisting of premium varieties.

Borrowing levels have a substantial impact on orchards consisting of traditional varieties due to the lower level of gross return and it is these growers in particular who were finding the years of lower returns very difficult to cope with.

The final outcome of the 1990 season provided some measure of welcome relief to growers with an average total payout of \$9.44 up from \$7.40 in 1989.

There are two factors outside the

direct control of the pipfruit industry which have a major impact on grower returns. The impact of foreign exchange rates is managed to a limited extent by forward cover of revenues which is governed by controls set down by the Apple and Pear Board Members. Then there is the effect of the level of fruit volumes moved into our export markets during our selling season.

It has been noticeable that our Southern Hemisphere competitors - Chile, Argentina, and South Africa often experience seasons similar to New Zealand, so that if we have a record crop of high quality fruit, invariably we are marketing fruit in markets oversupplied by the Southern Hemisphere producers, and prices fall.

Last year there was not an overbalancing of quality fruit in our markets and prices maintained high levels throughout the season.

In recent years the Board has moved closer to the major supermarket chains bypassing wholesale markets and contracting volumes by variety for the coming season six months before harvest. This is proving to underpin higher returns and augers well for the future.

The Board is reasonably confident that subject to oil prices indications for the coming season are promising.

KIWIFRUIT

Unlike the pipfruit industry, which has been successfully marketing apples and pears on saturated international markets for decades, the kiwifruit industry is now meeting stiff competition as worldwide production moves growing volumes of kiwifruit into markets traditionally available to New Zealand production.

Part of this developing problem has arisen because of the ease with which kiwifruit can be stored for up to twelve months. There is a distinctive move in the trade from pipfruit produced in the Northern Hemisphere when pipfruit becomes available from the Southern

Hemisphere. In fact one worthy pipfruit marketing personality in an address to a gathering of European fruit trade people said that "if God had meant pipfruit to be marketed for twelve months of the vear, he wouldn't have created the Northern and Southern Hemispheres".

Unlike the pipfruit industry which exports many different varieties and colours of fruit, kiwifruit is a kiwifruit, and the consumer has only one choice.

In the early days when growers were receiving in excess of \$11.00 per tray for kiwifruit, costs became established around that market return level and profits to the growers at the end of the day were high.

Today, with returns to the grower less that \$5.00 per tray, it has become difficult to trim costs associated with packaging and market presentation which are established.

With the reducing returns the market values of kiwifruit properties has fallen to the extent that for quite a large number of growers their equity has completely disappeared. This is a major concern. It is my belief that government should take a much firmer control of the management of the financial environment of our country.

It is extraordinary that with inflation at the level it now is, interest rates should exceed inflation by 8 to 10%.

If interest rates reached single figure levels and the exchange rate moved back to where it was after the last devaluation, I believe that the export revenue generating sector and specifically the primary producer would find much of the current financial constrain removed.

In recent years the focus of government appears to have moved from maximising the wealth of New Zealand through foreign exchange earnings to propping up the increasing numbers of unemployed people by raising the allocation of revenues of tax gathered from the diminishing number of tax payers.



Notable Trees

Since Notable Tree Registration No. 200 which, at last year's RNZIH Conference in Nelson, marked nearly 1130 actual trees "on the books", the Notable Tree Committee has "processed" another 350. This total included two venerable trees planted by Alfred Ludlam, circa 1860 (see RNZIH Newsletter No. 3,) in Lower Hutt. Also included were: an English Elm (Ulmus procera), and an English Oak (Quercus robur), both trees planted before 1919 outside the Church of the Nativity in Alfred Street, Blenheim.

The well-known "Arawa (House) Oak" at Rotorua is provisionally registered as No. 205 mainly because the tree's owner has not yet officially signified approval of the registration. This great tree is one of three surviving from the four King's oak acoms sent in 1861 by Queen Victoria to the Rev. Taylor at Putiki Mission Station near Wanganui. The seedling which grew to magnificent maturity at Putiki was windthrown in the 1968 Wahine storm. The three other seedlings were sent by Taylor to Christchurch Botanic Garden (the first treeplanting), to Dunedin Botanic Garden and to the reverend gentlemen Chapman and Spencer "near Ohinemutu".

On page 114 of "Great Trees of New Zealand", Burstall and Sales state that this Rotorua tree is "the largest of its species in New Zealand". RNZIH records of 44 English oaks in New Zealand do not support this statement insofar as girth and height are concerned. In Frimley Park, Hastings, is a *Q. robur* described by Tree Registration Officer, T. Looij, in 1986 as "a fantastic tree in the middle of the park." Its girth at 1400mm

above ground level is 350mm greater and its height nearly 4 metres more than the Arawa House tree, which is about 15 years older.

No. 206 registers 45 Norfolk Island pines (Araucaria heterophylla) planted along the Kaikoura foreshore between 1900 and 1912. The last planting of six trees was done by Kaikoura High School pupils in memory of Captain Scott and his party, who died in Antarctica.

No. 207: On the same coast, north of Kaikoura near Clarence, there is a stand of six kauri (Agathis australis), said to have been planted by railway workers in 1939 as a change from planting *Pinus radiata*.

No. 208: A pin oak, Quercus palustris, in Seymour Square is, says Alby Elwood-Smith, Tree Registration Officer for Marlborough, "a very significant tree" with a height of 32 metres and a canopy spread of over 30 metres. It was planted in May 1920 by the then Prince of Wales, during a visit to Blenheim.

No. 209: Monterey cypress, Cupressus macrocarpa - a veteran of over 100 years at Cross Hills (Rhododendron) gardens near Kimbolton: one of the few trees remaining from the original shelter belt planted around the owners dwelling when the area was first settled in the 1880s.

No. 210: South Queensland kauri, Agathis robusta - another outstanding specimen, at least 100 years old, growing at Owens Road, Epsom, Auckland. Girth 3550mm, height 28m, canopy spread 19m. See p.44 "Great Trees of New Zealand" by Burstall & Sales.

No. 211: Rhododendron

arboreum "Marquis of Lothian" - the first rhododendron to be registered by the RNZIH. The Dunedin Rhododendron Group Bulletin No. 12 states that this is a much-admired rhododendron of local origin. It was raised, possibly as long ago as 1880, by William Martin at his nursery, Fairfield, a few miles south of Dunedin. The cross (the reverse of the English hybrid) is R. thomsonii x griffithianum.

No. 212: English oak, Quercus robur. 199 of them plus 97 other genera, principally London planes and common elms, are in the group registration of trees along Ormond Road, known as Oak Avenue, Hastings. This long-overdue renewal of public interest in the Avenue was helped along by a letter of complaint written to the Mayor of Hastings by the original owner's granddaughter, Mrs Cynthia Wierzbicka. The 1874 planting of the original oak-acorns - from the Ormond Estate at Wallingford on the river Thames, England - was done by the Estate Steward, George Williams, under the direction of the owner, Hon. John Davies Ormond. Replacement planting still continues as the hazards of hot, dry summers, close (5-7metres) spacing, increasing use of the avenue by heavy truck traffic, etc. take their toll. Bob Burstall, co-author of "Great Trees of New Zealand", estimated that only twelve of the original oaks remain on one side and twenty on the other. Hastings District Council is taking an active interest in the trees and, hopefully, will be implementing the maintenance report and recommendations to be prepared by Tree Registration Officers, Thomas Looij of Hastings and Frank Buddingh of Dunedin.9

RNZIH Member Wins Civic Award

Winsome Shepherd, AHRIH, recently received a civic award for her outstanding contribution to horticulture in Wellington over the past 30 years. Mrs Shepherd is well known in Wellington for her work promoting the Botanic Garden, and in particular for the magnificent book co-authored with Walter Cook on the history of the garden. She has also worked tirelessly to protect Wellington's notable trees and was founding chairman of the RNZIH Notable Trees Committee based in Wellington.

RNZIH PRIZE WINNERS 1990

J.A. Campbell Memorial Prize for the candidate completing N.C.H. in Schedule I or IV with the highest average mark in subjects numbers 10 to 14, awarded to:

Ms Angela Carys Thompson - Whangerei

David Tannock Memorial Prize for the candidate gaining the highest mark in subject No. 20 In Schedule I, awarded to:

Mr Paul John Jamieson - New Plymouth

Junior Memorial Prize for the candidate gaining the highest mark in subject No. 14, awarded to:

Mr Alan Richard Rose - Tauranga

Rita M. Skellerup Memorial Prize for the candidate completing N.C.H. in Schedule II or III with the highest average mark in Subjects numbers 10 to 14, awarded to:

Mr Stephen Lloyd Dickson - Auckland

Peter J. Skellerup Prize for the candidate gaining the highest average marks in subjects numbers 1 to 9, awarded to:

Ms Marianne Groothuis - Dunedin

N.Z. Fruitgrowers' Federation No. 1 Prize for the candidate with the best overall record for a first year student in Schedule II, awarded to:

Mr Stephen Neil Bradley - Cromwell

N.Z. Fruitgrowers' Federation No. 2 Prize for the candidate with the best overall record in Subject numbers 15 to 20 in Schedule II, awarded to:

Ms Karen Dawn Emms - Gisborne

N.Z. Vegetable & Potato Growers' Federation No. 1 Prize for the candidate with the best overall record for a first year student in Schedule III, awarded to:

Mr Gary John Barham - Tauranga

N.Z. Vegetable & Potato Growers' Federation No. 2 Prize for the candidate, other than a first year student, with the best overall record in Schedule III, awarded to:

Mr Stephen Lloyd Dickson - Auckland

N.Z. Nurserymen's Association Prize for the candidate with the best record for the year in Schedule IV, awarded to:

Ms Joy Claudette Perkinson - Whakatane

F. Cooper Award for the best record for a student completing the Horticultural Sales Certificate, awarded to:

Mr Shaun Caldwell - Waiuku

VANISHING PLANTS, LOST MEDICINES

What do these plants have in common:

rosy periwinkle, meadowsweet, Chondrodendron tomentosum, foxglove, Indian snakeroot, mandrake, henbane, thornapples, mayapples, yams, licorice flower and willow bark?

Answer:

They are all plants from which medicines are derived that combat many of the ailments from which we suffer or die. Chondrodendron tomentosum (better known as curare), for example, provides a muscle relaxant helpful to patients facing major surgery. 80% of children with leukemia survive, thanks to the chemicals leurocristine and vinblastine from the rosy periwinkle. Digoxin from foxglove regulates heartbeat and is useful to millions of people with heart ailments. The Amazonian oak tree provides extracts that coagulate proteins, helpful to scientists in their search for an AIDS vaccine.

As the World Fund for Nature points out in a recent issue of *South* magazine, many of the plant species now severely threatened by the destruction of the environment might provide similar medicines. "Of the estimated 250,000 flowering plants believed to be in existence," says the organisation, "only some 5,000 have been tested exhaustively for their pharmaceutical attributes." The Fund notes that five different species of plants become extinct every day.



The cool splashing of water and the flutter of tiny wings is a delight on a hot summer's day.

Photo by Rosaline Redwood

Changes to Horticultural Qualifications

Impending changes to national horticultural qualifications were discussed at a meeting convened jointly by the Royal New Zealand Institute of Horticulture and the New Zealand Society of Horticultural Science in Wellington in March. Following on from previous submissions made to provide for changes in national horticultural qualifications, the meeting which involved industry, educational institutions, New Zealand Qualifications Authority, Royal New

Zealand Institute of Horticulture and New Zealand Society of Horticultural Science representatives, resulted in the formation of a steering group to prepare a proposal for the review of horticultural qualifications nationally from school to university. This review will link in with the new framework for education and training being established by government through the New Zealand Qualifications Authority.

Request for RNZIH Publications

We have received a request from Mr Noel Lothian, AHRIH, PO Box 27A, Crafers, South Australia, 5152 for back copies of the Institute's publications. Mr Lothian, retired Director of the Adelaide Botanic Gardens, writes: "It is realised that many are fairly old, but I would like to be able to complete my sets. I possess a number of duplicates which I would be happy to exchange, if requested. I am prepared to pay for copies or for photocopies of each completed issue, including the covers."

Journal of the NZIH (original series)

Vol 8 No. 1 (June 38)

15 No.s 2-4 (Sept 43 - April 44)

15 No. 4 (July 46)

17 No.s 1,3,4 (48-49)

NZ Plants and Gardens

Vol I No.s 2,5-8 and contents. (It is not known how many issues were published before changing to the smaller format)

Vol II No. 3

Vol III No. 1 and contents

Vol IV No. 5

Vol VII Contents

Journal of the RNZIH (new series)

Vol 1 List of contents and index

NZ Plants and Gardens

Vol 1 No. 2 (March 56)

Bulletin RNZIH

I possess a number of duplicates which I would be prepared to swap in exchange for the above. The duplicates are:-

Vol ? no.s 1,5 Vol 6 no. 4

Vol 7 no. 1 Vol 8 no.s 3,4 Vol 10 no. 4 Vol 11 no.s 1-4 Vol 12 no.s 1-4 Vol 14 no.s 1-4

BETTER LAWNS WITH LESS WATER

Homeowners in Novato, California, USA, are being paid up to \$310 to get rid of their lawns. It's all part of a city plan to convince homeowners to conserve water by replacing traditional turf lawns with water-conserving landscaping (xeriscaping), and drought-tolerant plants and flowers. City officials say that the average xeriscaped lawn represents water savings of as much as 454 litres per day in peak-use months.

BIODEGRADABLE?

Some household items take a long time to break down - for example: Orange peel takes two years to break down; cigarettes, one to five years: plastic bags, 10 to 20 years; a pair of pantyhose, 30 to 40 years; tin cans, 50 years; ring pulls, 80 to 100 years; and glass bottles, one million years.

RNZIH Qualifications Completed from June 1 to December 1 1990

NDH 1

Keith Matthew ARMSTRONG, Australia John Stewart BOOTH, Cromwell Wayne Frederick BUTSON, Dunedin Anita Joyce CATCHPOLE, Wellington Richard John DOYLE, Christchurch Simon James HENDERSON, Wellington Martin Christopher HERBERT, Hamilton Huw David HILL-MALE, Auckland Paul John JAMIESON, New Plymouth Andrew McGregor LOGAN, Hastings Ronald Dean MATTHEWS, Auckland Stephanie Marie McMAHON, Auckland Laurence John M OVERTON, Hamilton Antonia Wilhemina PURDY, Auckland John Charles REVELL, Christchurch Murray John RIXON, Mosgiel Harry ROELOFS, Christchurch Margreta Maree STEENS, Whakatane Mark Gregory TOMLIN, Auckland Rodney Lawrence WHEARTY, Christchurch Laurett Gladys WHITE, Upper Hutt Beryl Edith WILKES, Carterton Ian Whitaker WILSON, Auckland

NCH1

Bruce Graham ALLPORT, Havelock North Mary Catherine BECKETT, Upper Hutt Anita Raywyn BOUNDY, Christchurch Ruth BRITTAIN, Auckland Steven Graeme BROWN, Wellington Stephen Hugh BYRNE, Lower Hutt Gary George CATHCART, Christchurch Susan Frances CLUNIE, Russell Andrea Gail COLE, Auckland Christopher Peter COOK, Queenstown Samantha Jane CUCKOW, Auckland Norma Elizabeth Anne FINDLAY, Opononi Karen Dale HARRIS, Auckland Simon James HENDERSON, Wellington Craig Anthony HORNBY, Hawera Lon Adrien JOHNSON, Alexandra James John Knox JONES, Petone Ian Steven KING, Levin Ngaire Disston LLOYD, Wanaka Margaret Christina LOCK, Wellington Roger Edward MORGAN, Christchurch Michael Frederick PRATT, Wanganui Fave Denise RODGERS, Wellington Michel John SHEPHEARD, Whangarei

Angela Carys THOMPSON, Whangerei Diane Marilyn TRETHOWEN, Whangerei Steven Richard WILLIAMS, Auckland

NDH₂

Karen Dawn EMMS, Gisborne Sally Elizabeth EWER, Wairoa Gary Martinas GEURTS, Cambridge Nicholas Paul HOSKINS, Martinborough Craig Barry Robert MAXWELL, Te Puke

NCH₂

Gary Martinas GEURTS, Cambridge Trausti OLAFSSON, Gisborne Fiona Margaret PATERSON, Hastings Murray Gordon PROWSE, Christchurch Alan Richard ROSE, Tauranga David Robert WRIGHT, Hastings

NDH3

Anita Carole BERRIDGE, Kaiapoi Alec Forbes McERLICH, Christchurch

NCH3

Stephen Lloyd DICKSON, Auckland

NDH4

Michael David ARNOLD, Gisborne Kiri BRADBURY, Kaikohe Gerard Francis HENRY, England Christopher Joseph KAVANAGH, Auckland Peter Joseph MULLER, Te Aroha Joseph Jude MURRAY, Hastings Rita Evelyn OLIVER, Wanganui Brent Albert James RICHARDS, Christchurch

NCH4

Katherine Ann COHEN, Auckland
David Anthony CONDER, Christchurch
Simon Clifton KELLY, England
David Bruce MAPSON, Thames
Maureen Suzanne MORRIS, Tauranga
David Bruce MUELLER, Hamilton
Kathrina Marianne MULLER, Auckland
Stacy Jule NORRIS, Paekakariki
Jennifer Joan PERANO, Tauranga
Joy Claudette PERKINSON, Whakatane
Brent Stuart TORRENS, Auckland
Dennis Stephen TRAVAGLIA, Hamilton
Jeremy Peter WARDEN, Auckland

CHT

Gregory Stuart ALLAN, Whangarei Luella BEAZLEY, Auckland

Gail Christine BERGMAN, Hamilton Helen Linda BOLDINGH, Hamilton Andrea Mary BRANDON, Wellington Karren Bethia COLLINS, Auckland Margaret Lynn DALTON, Hamilton Paul Andrew DOYLE, Palmerston North Patricia Ann FLOCKHART, Gisborne Phyllida Ann FOSTER, Piha Juliet Marina GLAISTER, Balclutha Lyn Wreford HANN, Motueka Llewellyn Douglas HOOK, Nelson Eleanor Clague LLOYD, Dunedin Elisabeth Higson MEEK, Auckland Leendert Aart NUGTEREN, Hamilton Nigel Leonard Edward PARKER, Blenheim Arthur Edwin RENDLE, Cambridge Sandra Kaye ROBSON, Nelson Rachel Catherine SINCLAIR, Auckland Jason Terence SMITH, Nelson Diana Mary STEPHENS, Upper Hutt Leigh Donna STEWART, Wellington Glenda Charmian SUMMERS, Southland Margaret Darienne VOYLE, Matangi Bruce Alexander N WEST, Blenheim

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William Henry TREVARTHEN, Waiwera



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