

16 Horticulture

Winter 1980

in New Zealand

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



HORTICULTURE

IN NEW ZEALAND

BULLETIN OF THE ROYAL NZ INSTITUTE OF HORTICULTURE
NUMBER 16, WINTER 1980

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Cover by Janet Hart, Teaching Aids Unit, Lincoln College

ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE (INC).

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Bulletin Editor : Mrs Barbara McCartney.

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

Views expressed are not necessarily those of RNZIH.

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~ Editorial ~

Entry forms for this year's NDH and other RNZIH examinations have been forwarded to all registered students, and already some have been returned to us. If you have not received your entry form, please let us know - we find that some students miss out because they fail to advise us of a change of address. We should also like to ask students always to quote which Schedule they are registered in - most fail to do this, which means we have to look in up to five categories before we find the right registration card.

Every year we are amazed at the number of students who fail to read their information fully. We receive entry forms setting out wrong subject titles, or entering for more subjects than the student is entitled to in one year, or enclosing no payment or a wrong payment. All of these involve us in more letter writing and delays.

PLEASE students - read all instructions carefully, and THINK before you complete that entry form.

We have had enquiries about past issues of the Bulletin and Journal. These are available from this office as follows :

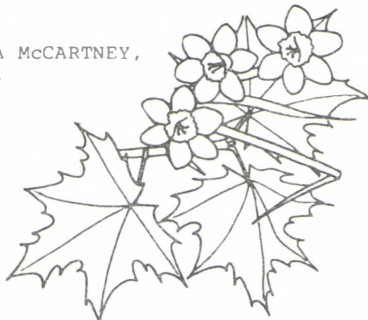
Bulletins - Nos. 1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14 -
all @ 50c each, which includes postage.

Annual Journals - No. 1 (1973) @ \$1.50, No. 3 (1975) @ \$2.00,
No. 4 (1976) @ \$3.50, No. 6 (1978) @ \$3.50,
No. 7 (1979) @ \$4.50, (includes postage)

We also have stocks of the book "Flowers for Shows" @ \$4.50, and the "Floral Art Handbook" will shortly be reprinted.

My thanks to those who have contributed articles for this issue of the Bulletin, and may I appeal for more contributions for future editions.

- BARBARA McCARTNEY,
Editor.



Items of Interest -

from the **A.G.M., & National Executive** Minutes :

46 RNZIH members attended the Annual General Meeting of the Institute, held in Hamilton on Saturday 12th May 1980. The Waikato District Council of RNZIH had organised this function most efficiently and thanks were extended to them during the meeting.

The Annual Reports of the Chairmen of the National Executive and Examining Board were received, and the following appointments confirmed :

National Executive for 1980 :

Mr J.O. Taylor, Lincoln College (Chairman)
Mrs M. De Castro, Blenheim
Mrs R.W. Shepherd, Wellington
Mr R.J. Ballinger, Blenheim
Mr I.D. Galloway, Wellington
Mr G.G. Henderson, Dunedin
Mr G.D. Mander, Tauranga
Mr A.L. Mason, Feilding
Mr R.J. Nanson, Wellington
Mr M.L. Steven, Hamilton
Prof. R.N. Rowe, Lincoln College
Prof. J.A. Veale, Massey University

Examining Board for 1980 :

Dr R.C. Close, Lincoln College (Chairman)
Mr R.J. Ballinger, Blenheim
Mr G.J. Bradbourne, Auckland
Mr T.C. Davies, Auckland
Mrs M. De Castro, Blenheim
Mr I.D. Galloway, Wellington
Mr G.G. Henderson, Dunedin
Mr R. Lucas, TCI, Lower Hutt
Mr N.K. Weal, TCI, Lower Hutt
Mr D.J. MacKenzie, Hastings
Mr G. Smith, New Plymouth
Mr J.O. Taylor, Lincoln College
Prof. J.A. Veale, Massey University
Mr I.G. Forbes, Wellington

Co-opted to Examining Board :

Mr J.S. Say, Lower Hutt
Mr K.H. Marcussen, Christchurch

A Remit from the Auckland District Council of RNZIH that "National Executive investigate the production of an Institute letter-card, with a selection of appropriate illustrations, for sale through members to promote and publicise the RNZIH" was carried.

AGM & NATIONAL EXECUTIVE NEWS -

A Remit from Northern Districts which "notes with concern, growing trends in the development of the Horticultural Industry particularly in northern regions, and asks that National Executive take appropriate steps to publicise and investigate these problems" was discussed at length.

Speakers opposing the remit pointed out that extreme care would need to be exercised by a national body such as RNZIH to ensure that all legal implications were clearly defined and if such trends were within the law, little could be done in the short term to prevent the developments described. It was also considered that the National Executive was not in a position, either financially or authoritatively, to conduct such an investigation. It was generally agreed that more professional horticultural advisory services are needed and that some areas of the problem were a matter for the Consumer Institute to investigate.

After further discussion the following amendment was carried :

"The RNZIH notes with concern growing trends in the development of the Horticultural Industry particularly in northern regions, and asks that National Executive consider taking steps to investigate, and publicise, or refer their concern to the appropriate authorities."

CONGRATULATIONS

are extended to the following members who were elected Associates of Honour of the RNZIH :

Mrs D.A. Hardwick, Tauranga
Mr E.H. Latimer, Auckland
Mr R.J. Nanson, Wellington

The awards were conferred by unanimous vote of the Meeting and the Chairman congratulated the recipients.

The annual subscription was raised to \$10.00 for the year beginning 1/1/81, for General Members, and a pro-rata increase will apply for other categories of members.

The 1981 Annual General Meeting venue will be Christchurch.

After the completion of business, Mr Ian Gear of Hamilton addressed the meeting on "Training in Horticulture". This talk was well presented, provocative, informative and provided a high-note ending for a successful Annual General Meeting.

The Banks Lecture in the evening, presented by Mr Eric Toleman, was very well received. This Lecture will be published in the 1980 Annual Journal.

At the National Executive Meeting of 23 May, the following members received the award of Fellow of the RNZIH :

Mrs M.E. Ryan, Wainuiomata
Mr G. Rainey, Auckland.

Congratulations are extended to Mrs Ryan and Mr Rainey.

District News

AUCKLAND :

Our first field trip of the year proved an outstanding success. We visited Dr and Mrs Hamilton's garden at Warkworth, situated on the banks of the Mahurangi River, where the bush forms a backdrop to the house and garden which merge into one another. The Hamiltons have made over this bush and an accompanying area containing an oak and a Norfolk pine of historic interest to the Lands and Survey Dept. as a reserve. Both the oak and pine are over 100 years old and have heights of 73' and 120', and girths of 20' and 27'6, respectively. The Hamilton's garden features a rock pool garden, with *Gentiana acaulis* flowering happily in a pocket, well-laid-out beds of *Lapageria rosea*, *Aristolochia gigantea*, *Anopterus glandulosa*, *Rhabdothamnus solandri*, *Sophora microphylla*, *Michaelia doltsopa*, *Crinum asiaticum*, *Dizygotheca elegantissima*. There were beds of late-flowering roses and multi-coloured dahlias, as well as the orchard to be explored.

Dr Hamilton was the speaker at the Auckland Institute and Museum meeting in May, when his topic was "Little Barrier Island" - its plants, history, and the Institute's role in its acquisition as a sanctuary.

CANTERBURY :

RNZIH Diplomas and Certificates will be presented to Canterbury students on 22 July. This function is being enhanced by a talk on "Wines and Winemaking in Canterbury" by Dr David Jackson, of Lincoln College, and perhaps a sampling of some of the Lincoln College research wines.

In October Canterbury members will be shown through the tissue culture laboratory at Lincoln College, and hear Tony Conner speak on its relevance to horticulture.

OTAGO :

The Otago A.G.M. elected office bearers plus a committee of ten, covering a range of interest and activities. It is encouraging to have several younger members, and a students' representative.

POVERTY BAY :

Horticulture is playing an important part in the plans for Gisborne's City Centre - walkways over the Taruheru River from Bright Street and Lowe Street give pleasant access to the trees and fountain and museum area. The Midway beaches have areas of tree plantings, well protected in salon cloth enclosures. Great credit can go to the foresight of Campion College planners - these lovely trees, now fully grown, and well-kept lawns, give pleasure to many a traveller.

DISTRICT COUNCIL NEWS CONT -

SOUTH TARANAKI :

The 1980 programme includes an address on the National Parks of North America. Guest speaker, Dr George Mason, Manager in charge of new projects for Ivon Watkins-Dow Ltd., New Plymouth, will give his impressions of the National Parks of North America. Widely travelled, Dr Mason has visited the two National Parks of Hawaii, Parks on the West Coast of the U.S., the Canadian Rockies National Parks, and for contrast those of Eastern U.S. An entertaining programme with slides to illustrate.

WELLINGTON :

An enthusiastic group arrived at the Upper Hutt nursery on a dismal overcast morning. Mr Lex Bartlett showed us around this small, well-planned, nursery. The glasshouses were all of steel frames and aluminium glazing bars. Heating was provided by oil fired hot air furnaces. In full flower was a batch of winter flowering Begonia. Growing up the support struts in the glasshouse was an interesting collection of Hoya. Among those noted were : *Hoya keysii*, *H. longifolia*, *H. purpureo-fusca*, *H. carnosia*, *H. imperialis*, *H. australis*, *H. motoskei*, *H. bella* in baskets. Red and white cyclamen featured large, firm, well-shaped plants in full flower. One had 32 flowers on it! These plants were only 10 months old, and were grown from seed obtained from Colegraves in Oxford, England.

Outside, a *Griselinia littoralis* 'Dixon's Cream' caught the eye, and a wide range of ornamental conifers - with the slow growing *Abies balsamea* 'Nana', a tiny bun-shaped conifer which may take 20 years to reach 1' in diameter and 6" in height.

After lunch we visited Mr Manning's garden to see his large collection of fuchsias. He has over 500 different varieties and although the peak flowering was past there was sufficient bloom to show the wide range of colours and shapes in this popular flower.

WHANGAREI :

An insight into the many sights and day-to-day lives of the nearly 1,000 million people of the People's Republic of China was given to members by Mr and Mrs H.J. Hare. They were among a party of 24 New Zealanders on a 3 week tour arranged by the NZ-China Friendship Society. The party travelled by train from Hong Kong to Guangchow (Canton), then flew to Peking, later flying on to Shanghai. Peking's 8 million people own 2 million cycles. There were many groups of foreign tourists, and all were impressed by the cleanliness of the cities visited, many of which have some very impressive large new buildings. Women are not expected to marry until 25, and are expected to retire from work at 50. Children are cared for by the State while mothers work.

Parts of the country had been almost denuded of trees by the end of the 1940's, but since then millions of trees have been planted. A commune of 22,000 people near Shanghai was visited, where they grow 200 varieties of green vegetables for market, are self-supporting, and have many small industries within the commune.

Seed & Plant Exchange

Following the announcement in Bulletin 15 that we are starting this column, two letters have flooded in with the following requests :

Dawn R. Barry, P.O. Box 19, Stewart Island, wishes to obtain (either buy or exchange for seedlings or cutting-grown Stewart Islands plants) the following :

Metrosideros carminea
Pomaderris phyllici folia v. *polifolia*
P. kumeraho
P. oraria
Parsonia heterophylla
P. capsularis
Fuchsia procumbens
Bulbinella hookeri
Arthropodium cirrhatum

B.E.R. Jones, 13a St. Martins Road, Christchurch 2, is interested to know of any members who would be prepared to swap or sell, cuttings or plants of named varieties of all types of Pelargoniums, including Zonal and Ivy Geraniums, scented and specie geraniums and Regale Pelargoniums.

Please contact these writers at their own addresses.

REPORT ON THE SUMMER SCHOOL OF PARK MANAGEMENT - CANBERRA

The 7th Summer School of Park Management was held in Canberra during the month of February 1980. This residential school was run by the Canberra College of Advanced Education, with the advice and support of the Royal Australian Institute of Parks and Recreation, the object being to provide a stimulating experience for practising Park and Recreation area managers, and to enable an exchange of experiences and ideas and enhance the participants' knowledge and understanding of planning, management and administration of Parks and Recreation areas.

As a participant in this course I found it very applicable to New Zealand, and enlightening towards Park Management, the Australian way. Briefly, the programme contained lectures on Park Planning, Design in Parks, Parks for the People, Tourism, Parks for the Disabled, Coastal and Wildlife Management, plus many other subjects spanning the whole spectrum of Park and Recreation Management.

This course is run every year, the problem being to keep the number of participants down to only 35, when as many as 85 apply. The value of the course is recognised throughout Australia and New Zealand, and is well worth attending.

- Graeme W. Hall, NCH,
Park & Recreation Dept.,
Timaru.

C4 WEEDS - WHAT ARE THEY ?

The letter on page 21 of Bulletin 15, from Dr Jennifer Hartley, Secretary of the NZ Weed and Pest Control Society, drew a member's request for clarification of weed categories.

Dr Hartley's reply is :

"When I felt compelled to comment on the implied relationships between C4 plants and herbicide sensitivity, as stated in your publication, I assumed the meaning of C4 was understood, and used the term again. Now I understand your reader requires some explanation.

The term C4 refers to the photosynthetic process. Green plants have the unique ability to combine CO₂ from the atmosphere with water to release oxygen and form sugar.

As we all know, sugar contains a lot of energy, therefore energy is required to make sugar. Plants obtain the necessary energy by the action of sunlight on their chloroplasts. The sun's energy is used to split water releasing oxygen and attaching the hydrogen on to a high energy enzyme. This high energy enzyme is then used to carry the hydrogen to the CO₂ to form a carbohydrate.

The process, however, is not simply one of joining up a number of CO₂ molecules into a sugar containing six carbon atoms. Instead the new CO₂ molecule is attached to more complex molecules already in the system and this is where different plants use different pathways.

Most temperate plants use the C3 pathway. Here, in very simple terms, CO₂ is attached to an existing 5 carbon sugar to form two 3 carbon molecules. These two 3 carbon molecules are then combined to form a 6 carbon sugar, the surplus of which is taken out of the system to form sucrose, starch and other higher carbohydrates of the plant tissue while the rest returns to the cycle as 5 and 7 carbon sugars.

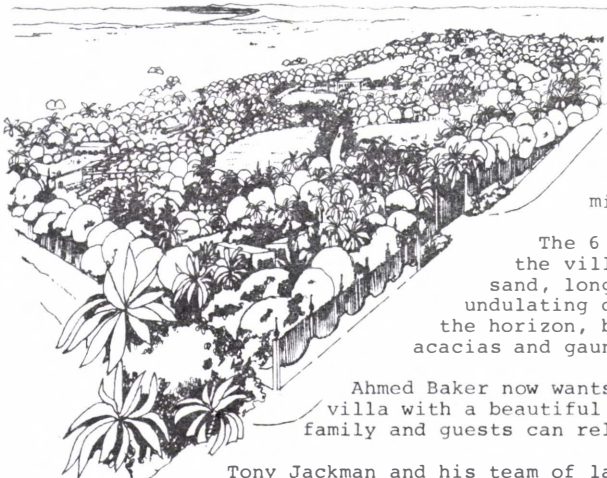
The C4 plants attach the new CO₂ molecule to an existing 3C molecule to form a 4C intermediate hence C4. Having fixed atmospheric CO₂ on to a 4C molecule, this molecule can then pass it on to another "acceptor" and then return to the cycle. The "acceptor", by some process not fully understood, takes the carboxyl group through a 3 carbon molecule to a 6 carbon sugar.

The difference between C3 and C4 plants is, therefore, the intermediate used to fix CO₂. The C3 process is more efficient in energy use but does not fix as much CO₂ per unit leaf area as the C4 process. The C4 process is more temperature dependent than the C3 process, operating most rapidly at 30-50°C and very slowly below 10°C. The C4 process is, therefore, found in many tropical and sub-tropical plants while the C3 process is used by temperate region plants. It also explains why a plant like maize (C4) grows very slowly if sown too soon in a cool spring and very rapidly once the temperature is high enough.

I hope this attempted simple explanation of the very complex photosynthesis process will help to solve your reader's problems."

NZ LANDSCAPE ARCHITECTS OFFER INTERPRETATIVE AND DESIGN SKILLS
IN THE MIDDLE EAST,

(Abridged from the "Press" article by Garry Arthur, 3/4/80)



Ahmed Baker, a highly placed citizen of Dubai in the Persian Gulf, has built a luxurious villa at Amardi, an oasis 15 miles from the capital.

The 6 ha estate surrounding the villa is virtually pure sand, long low waves of undulating dunes disappearing to the horizon, broken only by dry acacias and gaunt thorn trees.

Ahmed Baker now wants to surround the villa with a beautiful garden in which his family and guests can relax.

Tony Jackman and his team of landscape architects in the firm of Boffa Jackman and Associates, based in Christchurch and Wellington, was approached by McConnell Dowell Ltd., an Auckland civil engineering firm, to produce a scheme transforming the Arab's block of land into a veritable paradise.

One of the first graduates of the Lincoln College School of Landscape Architecture, Tony Jackman has produced some extraordinarily imaginative proposals for the villa.

It will be no ordinary garden, but a model of its kind to illustrate to the oil rich Gulf states the potential there is for improving their environment with modern technological aids, good management and a generous budget.

As in Babylon, a water sequence will flow through the whole development. The villa will open on to a courtyard featuring a long pool of many fountains, terminating in a balconied pavilion containing shade-loving species and clothed in hanging plants.

The many ponds and streams of the palace gardens will be stocked with carp and other fish, both ornamental and for culinary purposes.

Groves of date palms, olive and citrus trees will be planted nearby. Riding trails will wind through the trees from the stables behind a huge horse arena where the owner will be able to parade the fine Arab blood-stock for which he is noted. Open spaces will be planted in alfalfa as a fodder crop for livestock, and bermuda grass lawns provide sweeping vistas from the villa itself.

Pohutakawa, ake ake and other salt and heat tolerant New Zealand trees will be included in the overall planting of

NZ LANDSCAPING IN MIDDLE EAST

eucalypts, date palms, casuarina and other species from the Australia and Pacific region.

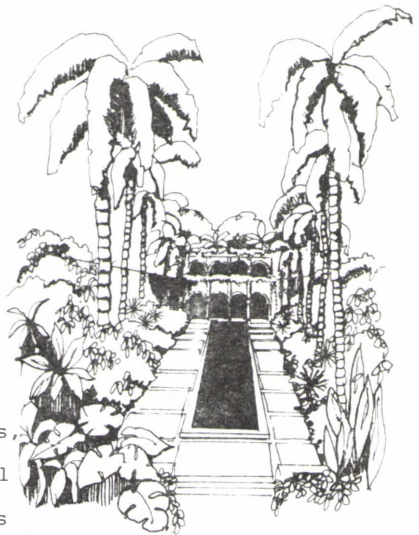
Like many wealthy Arabs, Ahmed Baker is keen on falconry and hunts with them in Pakistan. Birdlife is sparse in the desert, and Tony Jackman's landscape scheme provides extensive free-flight aviaries, shaded with soaring fibre-glass awnings inspired by the shape and colour of Bedouin tents. The falcons will be in a separate enclosure.

Ahmed Baker is interested in commercial horticultural production, so the scheme provides for large-scale growing of sweet potatoes, corn, beans, onions, garlic, aubergines, asparagus, artichokes, peas and herbs. In the controlled environment of polythene greenhouses will be grown cucurbits, tomatoes, celery, lettuce, endives and peppers. Pineapples and other fruits will be grown under shade canopies.

A walled orchard will be planted with mandarins, grapefruit, lemons, oranges, figs, mangoes, almonds and grapes. Huge colourful tents will protect corners of the orchard in which will be experimental plantings of paw paw, feijoa, bananas, avocados, guavas, pomegranates, loquats and macadamias.

Dubai is a former British protectorate and British firms have had the lion's share of the work there. New Zealanders have also earned a good reputation and many expatriates live and work there.

In the field of horticulture, Tony Jackman feels that he has an advantage over his British counterparts, through his knowledge of Australasian plant material that would do well in the region.



COURTYARD CONCEPT :
palm-lined pool & pavilion.



ORCHARD CONCEPT :
*citrus fruits,
central irrigation channels,
shade tents.*

Salt toxicity is one problem with the Dubai sands and this is also a problem with certain NZ soils at places like Governor's Bay, the Wairau plain and Central Otago.

Although water seems abundant, so many bores have been sunk in recent times there is concern for the long-term effect on the underground supply. However, a solution lies in the form of desalination plants being built at Dubai in association with the new aluminium smelters and power stations. They will produce 200 million litres a day.

Tony Jackman sees the over-all palace garden concept as a "synthesis of a lot of knowledge

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which New Zealand sits on and doesn't advocate enough". He has not been to Dubai, but Bob Crowder, Senior Lecturer in Horticulture at Lincoln College has visited the site, carried out a photographic survey and provided all the necessary information.

Tony Jackman is confident that with the controlled application of water and fertiliser, everything proposed in his scheme can be grown - in spite of temperatures that hover around the 40's.

"We don't believe that the area has expressed all of what can be planted there," he says, but he believes that continuing management of the gardens will be essential.

If Ahmed Baker goes ahead with the New Zealand scheme - estimated to cost more than \$500,000 - he will find himself living in his own botanic garden. Now Tony Jackman is waiting to hear what he thinks of his plans.

Book Review

"Horticulture, Principles and Practical Applications" -

by R.P.Poincelot 1980, Prentice-Hall, New Jersey.
Price \$26.55

This is an attractively presented book with a colourful hard cover and a generously illustrated text having many diagrams and black and white plates. There are 652 pages covering the principles and practical applications of horticulture.

This is a large subject to cover and a detailed 'in-depth' coverage of every subject is not to be expected. The author successfully describes many of the principles of horticulture and their application under an introduction to horticultural science, applied horticultural science and horticultural production. These three parts are helpful although the topic of plant nutrition appears in three different chapters.

Some subjects receive rather superficial coverage, such as pest and disease control, while the chapter on plant biochemistry appears to be an unusually detailed account compared to adjacent topics. Hormone physiology is extremely relevant to horticulture and could have received more emphasis. However, many other subjects are given a good basic coverage such as propagation and various aspects of applied horticulture.

There are a few detailed references to U.S.A. in the form of climate maps and the use of oxide ratings for fertiliser which are not relevant to New Zealand. These are relatively minor aspects, however.

In conclusion, the book very successfully covers basic horticulture and can be considered a satisfactory alternative to the other two or more similar books which provide a general text for horticultural students and amateurs.

- M.B. Thomas,
Lincoln College.

Notable and Historic Trees

The following trees have been registered since August 1979 :

- (i) A kauri, *Agathis australis*, in Eastbourne,
- (ii) A gold-leaved chestnut, *Astanopsis cuspidata*, Lower Hutt,
- (iii) An English oak, *Quercus robur*, in Te Kauwhata,
- (iv) Five (5) English oaks, *Quercus robur*, in Stokes Valley - each tree registered separately,
- (v) Three (3) Spanish chestnuts, *Castanea sativa*, in Pauatahanui - a group registration.

The Notable and Historic Trees Committee comprises :

Mr G. Nind, (Chairman)
Mr D. Rowe, (Secretary/Treasurer)
Mrs D. Menzies, (Publicity Officer)
Mrs W. Shepherd,
Mr M. Reece, - all of the Wellington area.

To date 21 trees are registered under the scheme. The Committee meets at approximately three-week intervals depending on business to hand. The morale of members is generally high, and although progress to date has been slow, the scheme seems to be gaining momentum. For this to continue, the support of all District Councils is desirable as the ultimate aim - a nationally recognised Tree Register - certainly depends on a team effort.

Local Authorities have generally responded with interest to the scheme as follows :

- (a) Five trees have been placed on local authorities' District Scheme Registers following recommendations from the Committee.
- (b) Thirteen trees are being considered by local authorities. Of these, nine are in the area administered by the Lower Hutt City Council, which is now considering the inclusion of a Tree Register in its District Scheme Review following recommendation from the Committee.
- (c) Only three local authorities have refused or ignored the Committee's recommendations.

A special vote of thanks has been extended to Mr Ray Mole, the Wellington District Council Tree Registration Officer, who has effected the registration of fourteen of the trees currently registered.

MASSEY UNIVERSITY LANDSCAPE DESIGN WORKSHOP

August 11 - 13, 1980 - for those having a professional interest in landscape design and development.

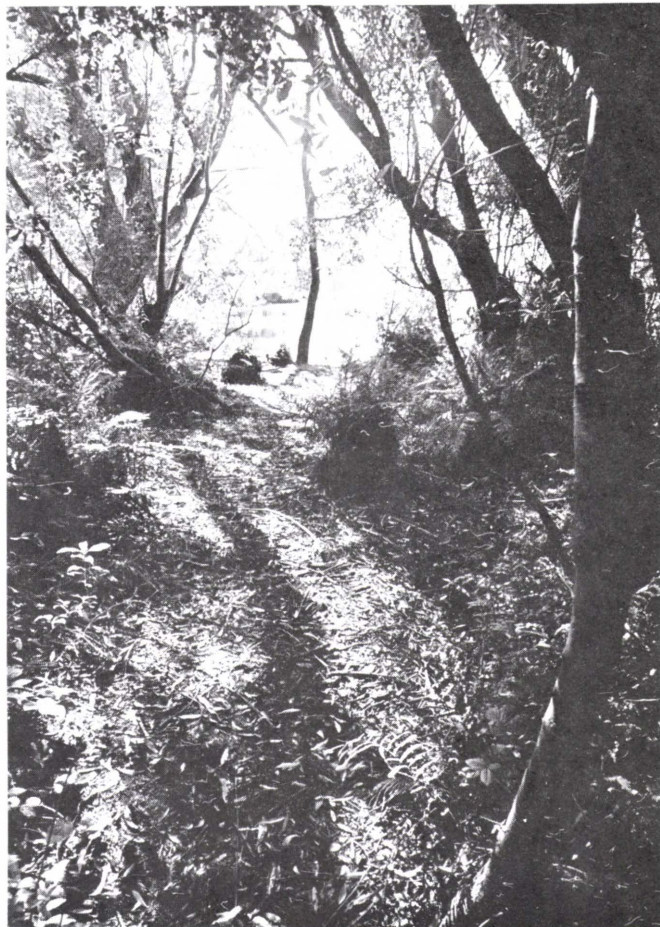
Registration fee - \$ 25.00

For further information, contact : Mrs L.M. Maughan,
Horticulture & Plant Health,
MASSEY UNIVERSITY.

A BUSH WALK FOR CHRISTCHURCH -

Who would have expected to find a lakeside bush walk in suburban Christchurch? The City Council has been working on the Horseshoe Lake reserve, in the suburb of Burwood, and has now presented to the public a walking track which travels through a wildlife reserve and beside the lake. Behind the lakeside forest, much of the reserve is now leased for grazing. That use could change when the reserve is further developed, perhaps for such activities as picnicking in the cleared spots.

The track, built mainly by students this past summer, starts at the end of a new stopbank. Inside the forest its unusual character is seen straight away. The ground is sometimes boggy, sometimes spangy.



The City Council's tree expert, Mr Walter Fielding-Cotterell, who is RNZIH Canterbury D.C. Chairman, says most of the wild riverbank is a gradual build-up of matted, floating vegetation forming a crust.

A BUSH WALK FOR CHRISTCHURCH

It is not known yet how well the ground will stand up to even limited amounts of walking by visitors who come to see the breeding ground of pukeko and ducks, and the many fantails. In several places the track comes out to the lake. Further along the undergrowth changes - there are small cabbage trees, big patches of large flax, niggerheads and ferns. To the left is a swamp pool spiked with bulrushes.

Orange pegs denote where the Drainage Board is undertaking a vegetation study.

Where the going underfoot is very soft, log walks have been wired together, and newly planted grass is starting to take hold on stretches of the bank laid bare by flood relief dredging. Thick willows are also starting to reappear.

The Christchurch City Council is to be commended for this imaginative undertaking.



* from "The Press", 13/3/80 - photographs by David Alexander

THE SUMMIT ROAD SOCIETY, CHRISTCHURCH -

The Summit Road Society was formed in 1948 to co-ordinate public opinion, raise finance, and carry out projects for the improvement of the Port Hills - Akaroa Summit Road, its walking tracks and Scenic Reserves.

This it has done steadily, sometimes spectacularly, and always advisedly, so that today, in virtual partnership with the Lands and Survey Dept. and Local Body advisers, and with the Regional Planning Authority, the Society and its affiliated organisations can look back with pride on some real accomplishments. For over 30 years some 300 school children have planted trees in the Scenic Reserves - over 40,000 shrubs have been planted by this group alone.

The Summit Road runs through an area of great geological and botanical interest, as well as being a great tourist attraction. It has been estimated that approximately 250 species and varieties of plants may be found. Some are unique to Banks Peninsula. It should be realised that in their original state the hills were never heavily bush-clad. Timber trees, mainly totara and black pine, grew in the wetter areas, but were soon cleared for building in Christchurch. Only trees unsuitable for building remain.

At certain points interesting associations may be found, e.g. ribbonwood (*Plagianthus betulinus*), kowhai, weeping matipo (*Myrsine divaricata*), *Melicope* and various coprosmas at Kennedy's Bush. On the steep slopes, on the cold side, beyond reach of stock may be found the bright yellow flower-clusters of the ground *Senecio* (*Saxifragoides*). On the sunnier slopes are everlasting daisies (*Helichrysum bellidoides*). In the Ahuriri Bush, colourful pepper trees (*Pseudo-wintera*) abound. Climbers are to be found in many areas including several species of clematis, the native woodbine or jasmine (*Parsoncia*), lawyer and supplejack.

Many types of ferns (*Asplenium* and *Blechnum*) occur, and the dainty necklace fern defies animals and other unfavourable factors.

The occasional speargrass or "Spaniard" (*Aciphylla*) thrusts its head above the surrounding tussocks and is re-emerging in several of the reserves.

A short list of some of the commoner shrubs :
flax, manuka, astelia, pittosporum, NZ iris (*Libertia ixiodes*), milk-tree (*Paratrophis*), mahoe (*Melicytus*), broadleaf (*Griselinia*), koromikos (*Hebes* including *lavaudiana* which is peculiar to the Peninsula), tree daisies (*Olearia*, including *fragantissima* and *avicennifolia*), kaikomako (*Pennantia*), fuchsia and fivefinger (*Pseudo-panax*). Many can be seen from the roadside. For a more complete list and fuller information refer to "The Botany of Christchurch" by the late Professor Arnold Wall.

Several walking tracks have been made across the area, and the Summit Road Society has produced guides to these, indicating where they start and finish, and how long they should take.

(Editor's note : three years ago we took American friends for a drive from Lincoln to Akaroa, then right around the bays to Dyers Pass (we ran out of time to complete the length of the Summit Road) and they marked this area in their guide book with 4 stars! The most they had given any other area in NZ was 1 star, and that only sparingly.)

STREET FLOWERS -

The Auckland D.C. newsletters have recently featured notes about street flowers, those hardy specimens which continue to thrive, often unnoticed, in the most hostile surroundings.

Every city has its quota of weedy patches, where buildings have been knocked down, or trees removed. Richard Mabey has written a book on the subject, which provoked the interest in Auckland street flowers. Wyndham Street has suffered from an unfortunate history of tree plantings, and there are several neglected patches of weeds to inspect - with a surprising number of different weeds. Doubtless some of their seeds are in the soil put in with the trees, but seeds of others would have been carried on to these convenient pieces of ground by the wind, etc. How else would you explain *Buddleia davidii* flourishing in Swanson Street?

Chris Howden has noted the following examples :

Growing on a central city building is a fine specimen of bracken fern and associated grasses. Bracken fern is generally a native coloniser of burnt-over hill country or roadside waste areas. The city cannot exclude the country - only the work of man can prevent this re-colonisation of plants in the city.

Chris watched for a year the progression of a convolvulus vine clothing a power pole in Newmarket. The vine had grown inside an insulated pipe running from the ground to the top of the pole. The display of flowers was magnificent. However this act of aggression on the urban scene finally brought itself to the attention of the Power Board. Lianes such as supplejack and bush lawyer rapidly penetrate disturbed native forests. The same principle occurs in the city.

Manukau Road has perhaps the smallest median strip in the world! A crack between the concrete road and asphalt has provided a niche for grasses and other herbs. It amazes me that these plants can survive the intense traffic running over them. Their ability to survive and provide that line of life amongst so much urban desert could be considered just as beautiful as the brightest blooms in the Parnell Rose Gardens.

On a walk around Mt. Eden recently, we came across a vacant section covered with tree privet jasmine, *Albizia lophantha*, onion weed and a whole host of recognised 'weeds'. To some, this scene could represent one of horticultural disobedience, and they might believe that the local authority should immediately come into action with its manpower, herbicides and policies of city beautification. To others, and I am one of them, the vacant section represents nature in its glory.

In Britain attention is being given to such vacant sections because they have been shown to have a great variety of plant and animal communities. Such areas deserve protection - such natural areas would also be valuable to remind us of what would happen if man were no longer the dominant species in the city.

In 'horticulture' we are concerned with a narrow range of 'acceptable' plants and we disregard many beautiful and vital species because they have the labels of weeds. These weeds survive despite man, and beautify unexpected niches throughout the city and suburbs.

OBITUARY - JAMES ANDERSON McPHERSON, NDH, AHRIH, FIPRA

Although his long illness had separated him from us for some years, news of Mr James McPherson's death must have greatly saddened all who admired his genial disposition, his love of plants, and his concern for the proper training of young people in the horticultural profession.

Gaining his early training at Dunedin Botanic Gardens, and later in Christchurch, he was accepted as a student to Kew in 1924. There he excelled in his studies, returning to New Zealand to become Superintendent of Parks in Invercargill (1927) Director of Botanic Garden, Christchurch in 1933, and finally Director of Parks and Reserves in Auckland from 1945 until his retirement.

As an Associate of Honour and Dominion Councillor, Mr McPherson was a leading personality within our Institute, and was elected to the Examining Board as early as 1937. Always keenly interested in the welfare of horticultural societies, he was a Life Member and Vice-Patron of the Auckland Rose Society until his death, and contributed much to the origin and success of the Auckland Horticultural Council.

But above all, Jimmy Mac, as he liked to be called by his friends, was a Southerner with an unquestionable knowledge and admiration of the vegetation of the Southern Alps. He was an authority on the botany of the region and a correspondent on this subject with the famous NZ botanist, Dr. L. Cockayne. This correspondence is now in the Turnbull Library.

One of the most pleasing photographs I have of Mr McPherson was taken in the Christchurch Botanic Gardens in 1937, with seven of the trainees then studying under him. Some of the men trained by him, or who have come under his influence, now hold key positions within the horticultural profession in this country, and one is heartened by the fact that they too are concerned with the training of the young, so that Mr McPherson's work lives on.

- Jas. A. Hunter, (AHRIH), Morrinsville.

THE XXIST INTERNATIONAL HORTICULTURAL CONGRESS -

will be held in Hamburg 29th August - 4th September 1982. The Congress will focus on "Horticulture in the Industrial Society" to emphasise various aspects of horticulture in the vicinity of areas with high population density, the level of production intensity, the interaction with other branches of the economy, and the efforts made towards maintaining or creating a sound environment. It will also deal with all aspects of progress in horticultural science.

Write to : Congress Secretariat,
21st International Horticultural Congress,
Hamburg Messe und Congress GMBH,
Congress-Organisation Postfach 30 23 60,
D-2000 HAMBURG 36,
Fed. Republic of Germany.

The official language of the Congress will be English, so you can put that "Teach Yourself" book away.

Landscaping

(reprinted from "Weekend Magazine"
- Whangarei - May 1980)

The raised bed is one feature in the garden that justifies the expense and time required to build. Well designed, it has a strong architectural value.

It also introduces into the garden interesting colour and texture in wood, stone, brick or other materials.

Wisely-planned, a raised bed displays plants impressively and makes a smooth transition from one garden level to another.

The sketches show four ways raised beds can be constructed using masonry timber.

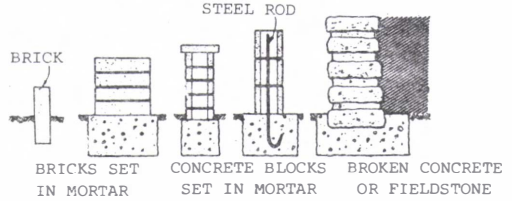
A raised bed is perfect for miniature and dwarf plants which are often lost in the garden among taller plants. You can really enjoy their diminutive charm when brought to eye-level.

A raised bed makes gardening easier - not so far for the gardener to bend, they are easier to weed, cultivate and water. Vegetables tend to produce earlier because a raised bed absorbs the sun's heat more quickly. Plants are also more protected from animals and children (except the mountaineering types.)

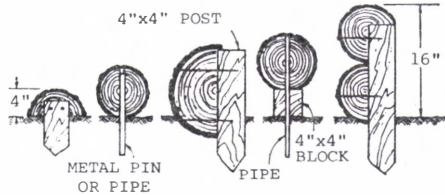
A raised bed is one of the most successful ways to create a three-dimensional effect or to effect a transition from one level to another.

A gaily-planted bed is a perfect buffer between two different garden areas. With a raised bed you can separate a terrace and parking strip, or a lawn and vegetable garden.

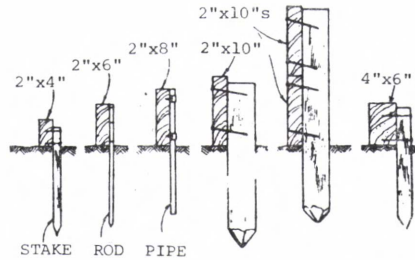
In a garden which is otherwise flat, a raised bed relieves the monotony.



Masonry makes a strong, enduring wall if the footings go down far enough and are heavy enough. To relieve water pressure, provide small holes for drainage through wall.

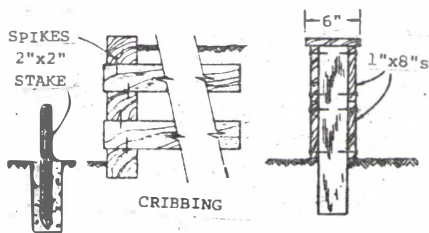


Weatherboard logs are appropriate for beds with azaleas, fuchsias, or begonias.



Rough-sawn, treated pine makes a good-looking low retaining wall, easy to install and weathers well.

LANDSCAPING WITH RAISED BEDS



Row of stakes (2x2") can be driven directly into the ground or embedded in a narrow trench filled with concrete. Where the wall supports earth, some cribbing adds strength.

In gardens with heavy, poorly drained soil, a raised bed makes it possible to grow *Daphne*, gardenias, citrus, and other plants sensitive to water-logged soil, such as herbs, succulents, cacti and many natives.

If you have a problem of change of level in the garden, consider the practicality and attractiveness of the one, two or three-step raised bed.

Although Fig.1 shows a raised bed with the railroad ties turning a corner, they could just as easily be extended 40 to 60 feet across a slope and serve as a substitute for a retaining wall.

The same idea could be carried out with concrete blocks set in sand or mortar or with 2 2x10" planks set vertically.

A two-level raised bed is suitable for a modest change of level perhaps 12 to 20" - between upper and lower garden areas.

Planted with colourful plants or shrubs a double raised bed is more decorative than many other types of low retaining walls.

If you have a gradual slope from the rear of the house to the property line, a series of double-step raised beds can be built to create a number of useable level terraces.

In a tight guest-parking area a series of raised beds can help you make the most of available parking space.

Terrace paving is often laid out in an arrangement of squares or rectangles set off by edgings.

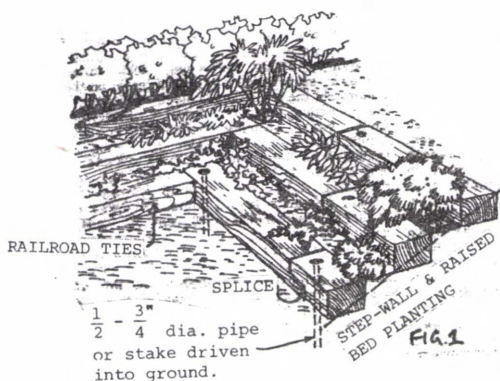
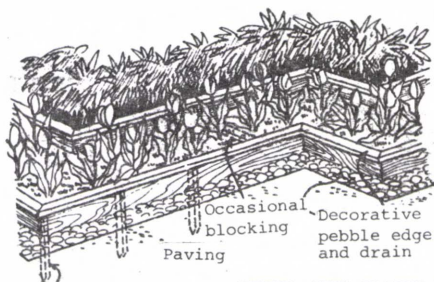


Fig.1



Staked construction

DOUBLE STEP RAISED BED

Fig.2

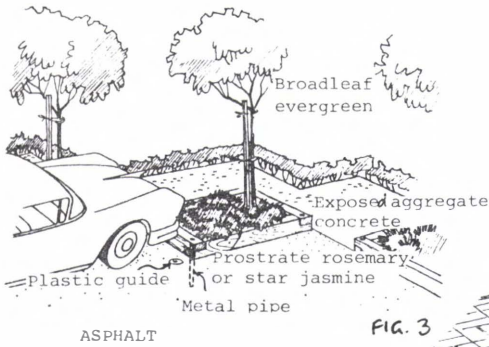


FIG. 3

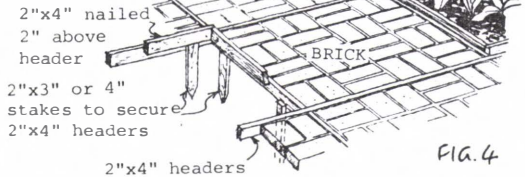


FIG. 4

Such paving can be much more pleasant if occasional rectangles are left open as planting beds. These beds will work better if the terrace is laid on sub-soil.

If your paving edgings are 2x4", all you have to do is nail an additional 2x4 liner 2" higher than the edging. Almost 6" of topsoil is then above the adjacent sub-soil level providing excellent drainage.

Congratulations ~

are due to Mr H.J. Poole, AHRIH, of Lower Hutt, who was awarded the O.B.E. for his services to horticulture, in the recent Queen's Birthday Honours,

and to two NDH students whose names were omitted from the list of 1979 examination graduates :

Mr John R. Smeed,
Mr Peter Bilton, both of Auckland,

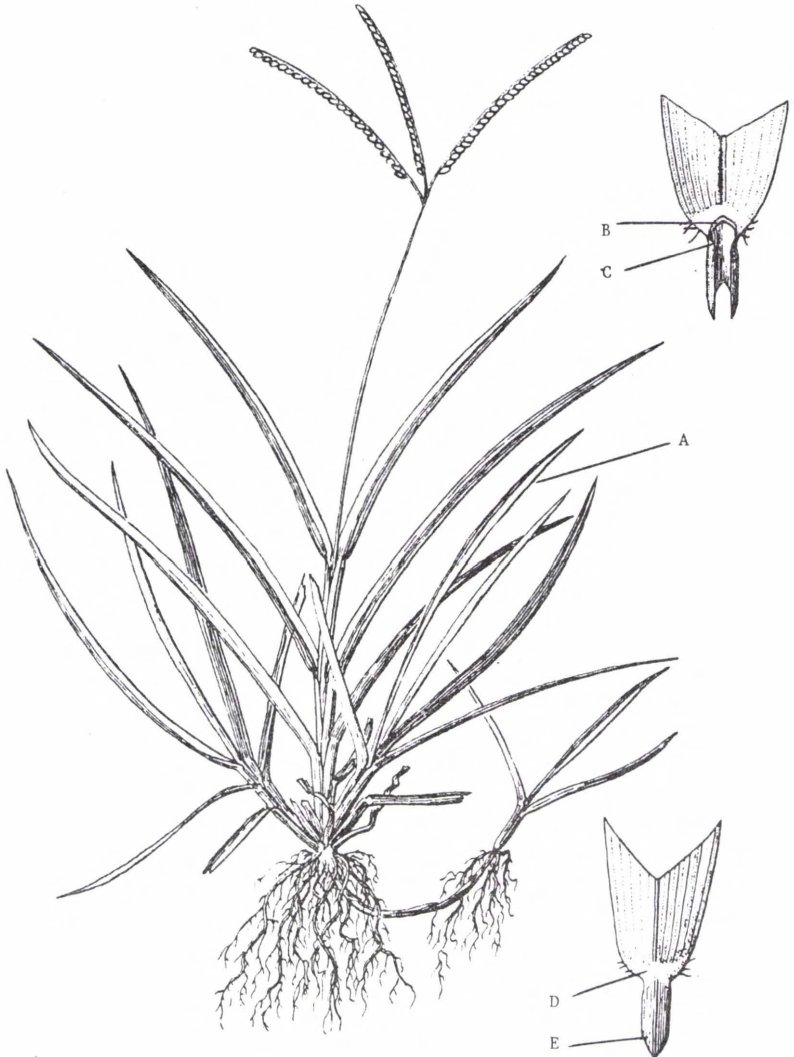
who completed National Diploma in Horticulture to Subject No.14, thereby qualifying for the National Certificate in Horticulture.

Know Your Turfgrass - 8

D.E. ALDOUS

PASPALUM

(*Paspalum dilatatum*)



KNOW YOUR TURFGRASS - 8

Paspalum - *Paspalum dilatatum*

- A. Venation - rolled in the bud, compressed and often flattened blade
- B. Ligule - membranaceous, truncate, short and frequently fringed with hairs
- C. Auricles - absent
- D. Collar - broad
- E. Sheath - rounded, usually hairless.

REMARKS : Known as Dallisgrass in the U.S., *Paspalum dilatatum* is a native of South America, and is now common in the warm parts of New Zealand. Paspalum, which is propagated by seed and short, creeping rootstocks, has good shade and wear tolerance, but can be knocked back by frost. Will not thrive on poor soils and can become sod-bound. Cutting height 3-5cm. Turfgrass purposes are rather limited and specific but regular mowing can make it a satisfactory turf in warm districts.

CLIVIA NOBILIS

Clivia nobilis is a South African bulb not seen in gardens as often as it should be. The flattened flower-stalk rises from a clump of dark green leaves similar in size to those of *C. miniata* but with rounded points and a slightly roughened texture. Flowers on short, bright-green stems spring from the centre of the flattened stalk to fall in a dense umbel on the 'light' side of the plant. These flowers - number over 30 at times - are of a similar colour to *C. miniata* but of tubular shape, each flower being some 4cm long by 1cm. When half open, the three inner petals are tipped with green but this colour changes to a warm pale orange as the flowers matures. Like *C. miniata* it is an excellent vase flower and has the added advantage of flowering intermittently throughout the year, the berries which follow also being attractive - fat and red, and useful for floral decoration. The fruits of *C. miniata* are believed to be poisonous and possibly these would be too. It can be grown in dense shade but this results in loss of flower colour. Moisture encourages flowering and a little liquid manure helps. Seeds germinate readily but it is a year or two before they reach flowering size.

Pineapple flowers or *Eucomis* are a floral arranger's delight as their stems can take on the most sinuous and interesting curves without artificial aids, and their wide-awake 6-petalled flowers are long-lasting. These are regularly spaced like pineapple eyes on a tallish, often spotted, stalk, topped with a tuft of leaves. The species most often seen in the Auckland area appear to be variations of *E. comosa* (*E. punctata*) and with selection, colours of both bracts and flowers into deepest rose and wine can be achieved.

E. pole-evansii is a much larger plant altogether, with a stalk up to 80cm and a correspondingly large greeny-white inflorescence.

E. nambesiaca is also available - said to be a dwarf replica of *E. clavata*. Any time between early December and March (depending on moisture supply) it forms a dense inflorescence of small whitish, almost sparkling, flowers like a miniature firepoker.

Like *Clivia*, *Eucomis* will grow under hard conditions, but will give of their best with a little kindness in the way of richer soils and appropriate moisture.

- Mrs K.J. Veal (FRITH), Auckland.

PUKEITI RHODODENDRON TRUST

You don't have to live in New Plymouth to be a member and supporter of the Pukeiti Rhododendron Trust. The property harbours a very valuable collection of Rhododendrons and is constantly being developed and expanded. In 1979 a number of new plants were added, including those from the Species Foundation in America, the NZ Rhododendron Society, and several private donations. Collections of bulbs and tubers have been imported again from the U.S.A., and these include *Trillium* and *Erythronium* spp. A batch of plants, collected in Sikkim by Ron Gordon, was successfully grown on and released from quarantine. They will now be privately propagated and distributed to enthusiasts throughout New Zealand. A small planting development of particular interest to native plant lovers is the fern collection along the Waterwheel Track.

Membership of the Pukeiti Rhododendron Trust can be arranged by applying to the Secretary, P.O. Box 385, New Plymouth. There is a possibility of a tour of the great gardens of England being organised by one of the major travel agencies. The idea is that it will be open only to members of Pukeiti and be conducted by someone within the Pukeiti ambit! More news later.

NEWS FROM ISRAEL :

RESEARCH, EXTENSION AND EDUCATION IN IRRIGATION

In Israel, the average efficiency of water application in the field today exceeds 80%. Two key factors contribute to this exceptional figure : 1) the farmers' willingness to absorb new knowledge, 2) the exceptional structure of the extension, research and support organisations.

A total of about 3,500 Ministry of Agriculture officials serve the farming community, plus about 10,000 employees of other bodies involved in farmer training, advisory work and export activities. The results of major new research findings are generally utilised by farmers within two or three years. Some farmers adopt new developments and carry out their own research, or experiment in conjunction with extension staff or agricultural researchers.

Irrigation is taught at the Hebrew University's Faculty of Agriculture in Rehovot and the Israel Institute of Technology in Haifa. Irrigation engineering research is also carried out at Haifa, while the Institute of Soils and Water of the Agricultural Research Organisation in Bet Dagan is Israel's centre for applied research in irrigation. Numerous other establishments are concerned with specific aspects of the subject, e.g. the Desert Research Institute of the Ben Gurion University in Beersheva concentrates on arid land irrigation.

from "Chronica Horticulturae" Vol 19 No. 1 April 1979.

English Lavender

The varieties called English lavender are particularly suited to English climate conditions. The long hours of summer daylight without too much heat give the world's finest oil of lavender.

They all have grey foliage, and flowers arranged in a spike, which are generally lavender in colour. They do not grow as tall as *Stoechas* type lavender and flower once a year.

To name a few grown in New Zealand :

'Dwarf Munstead' - lavender purple flowers' 'Folgate Blue' - blue lavender flowers; 'Grey Hedge' - silver grey foliage, flower spikes are thin and pointed, flowers mauve; 'Hidcote Purple' - violet-purple flowers; 'Old English' - has broader greener leaves and narrow mauve-flowered spikes; 'Pink Lavender' - narrow leaves with flesh-pink flowers, silver calyces, grows very upright, looks well when potted.

'White Lavender' has long broad silver leaves and spikes of white. There is a beautiful miniature white lavender about 15cm high with short, narrow grey leaves, tiny blunt heads of white flowers.

'Seal' is free flowering, leaves grey-green, flowers blue-mauve. 'Twinkle Purple; is smaller than 'Hidcote', with long deep mauve flowers. 'Broad-leaved Lavender' - as its name suggests, the calyces tend to hide the flowers. 'Woolly Lavender' has broad leaves with many grey hairs giving them a felt look. Its flowers and spikes are similar to 'Broad-leaved Lavender'.

'Dutch Lavender' - a cross between *Lavandula spica* and *Lavandula latifolia*. The scent is good, the flowers are in long, non-showy branched spikes.

It is wise to layer the lower branches, and be prepared to replace all lavender bushes about every 5 years.

- contributed by Mrs Bradford-Smith, Whangarei,
as published "Weekend Magazine" 3/5/80



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to the following new members :

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Mrs A.B. Reid, "
Mr A.J. Melville, Palmerston North
Mrs Y.B. Lorimer, Hamilton
Mr L. Pearson, Christchurch
Ms M.A. Bennett, Levin
Dr K.M. Cooper, Auckland
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