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# JOURNAL OF THE ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE

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## EDITORIAL

### THE GROWING AWARENESS

THE VIOLENCE OF THE MANAPOURI STORM has temporarily abated whilst preparations go ahead for the Commission's sitting. In Christchurch the decision of the Minister of Lands is awaited on the re-alignment of Harper Avenue on its course through that glorious heritage, Hagley Park. Doubtless the scene may be repeated on major and minor scales throughout New Zealand, and throughout the world.

Politicians, at all levels, political parties, government, local and other authorities have been amazed at the violence of the public reactions and some persons have been taking stock, trying to assess blame, to climb on the band wagon and gain a political advantage. Does that aspect really matter? Would the result have been any different if someone else had been in power? Should these things become just another political football?

Even if the decisions made on Manapouri and similar ventures are irrevocable, unalterable, we have still gained something really worthwhile and we are not referring to the extra kilowatts, A GROWING AWARENESS. For many years now the Institute has been one of the voices crying in a seeming wilderness of apathy. Now it is evident that the cries have not gone unheeded.

New Zealand is a country with a great pioneering tradition and this has always coloured our outlook. Our forebears literally had to carve this fair and beautiful land out of the bush to provide standing room, shelter and sustenance and the pioneering outlook has carried right over to this day. What if beauty was violated? An empty stomach, aching bones and a cold, drenched skin don't appreciate that beauty and anyhow there was plenty more just around the corner to be appreciated.

Thanks to their unrelenting energy, their alertness, endurance,

courage and, yea, even a certain foresight, we are now able to enjoy a wonderful heritage as the fruits of their efforts. We now do have the time to take stock.

Even though we have been given to understand that politicians and government departments are able to create more beautiful lakes than nature is that any reason to rush in, heedlessly considering only the most material aspects of any project. Mammon must not rule this God-given land nor should the internal combustion engine nor the power game. Future governments are going to heed the lessons of Manapouri in more ways than one. Certainly the public is not always right, nor is it always wrong.

Those lonely voices crying in the wilderness have not been in vain.

THERE IS AN EVER-GROWING AWARENESS.

JOHN GOVER

### NEWS FROM DOMINION COUNCIL

#### **Arbor Day Booklet:**

“Tree Planting for Arbor Day.” This little volume was originally written by the late M. J. Barnett, former Director of Parks and Reserves, Christchurch. It is mainly used by schools in connection with Arbor Day functions and it is being revised and re-issued. Practically no alteration is required to the existing text and drawings but an additional section is being added on planting container-grown plants. The Canterbury District Council reports that good progress has been made on this project. The cost is being borne by a generous Christchurch business man and city councillor.

#### **Horticultural Treasury:**

Your Editor is pleased to report that he has been given authority to proceed with this project in the Institute's name and District Councils, horticultural societies and various other bodies and individuals may expect to be approached for local information over the next twelve months. This scheme is still in the preliminary planning stages but for a general idea you are referred to the Editorial “What Should We See” in this Journal, September, 1969.

#### **Associates of Honour:**

“District Councils be asked to bring into their considerations at the time of seeking suitable nominations for the distinction of Associate of Honour, those adjacent areas which are not covered by a District Council so that in this way persons within those adjacent areas who

might be eligible would not be altogether overlooked. Likewise, members of the Dominion Council should keep this in mind and be free to bring forward the names of those persons whom they consider to be worthy of the distinction." Extract from a minute of Dominion Council, 8/4/70.

**Nomenclature:**

The Sub-Committee reported through Mr Salinger that a check list of *Hebe* cultivars is now being compiled. A register of Apple cultivars in New Zealand has been completed. The Auckland Carnation and Gerbera Society continues to register gerberas and is drawing up a classification of types of gerberas. The check list of *Leptospermum* has not been published since 1963 but is being kept up to date.

**Careers Booklet:**

This booklet, which is for the use of Vocational Guidance Officers, etc., is still available from The Secretary, Canterbury District Council, c/o Christchurch City Council Parks and Reserves Department, Christchurch 1.

**District Council in Gisborne:**

It is hoped that it will be possible to revive this and Mr Way has been supplied with the names of members domiciled in the Poverty Bay area.

**Institute's Bulletin and Journal:**

Mr S. C. Challenger of Lincoln College is seeking to build up complete sets of these published prior to "N.Z. Plants and Gardens" and has not been able to locate Bulletin Vol. I, No. III (1926); Journal Vol. I, Nos. II and III (1929); Journal Vol. XVII, No. I (1947). He would meet the cost of xerox copying if someone could lend him the originals.

**FURTHER EXAMINATION RESULTS**

*National Diploma in Horticulture: Junior—*

Ferguson, P. W., New Plymouth.

*National Diploma in Horticulture: Final—*

Fuller, G. M., New Plymouth.

**AWARD OF GARDEN EXCELLENCE, 1969**

*Beaufortia sparsa* This should have been shown as belonging to the plant family, Myrtaceae. The error is regretted.

**THE BANKS LECTURE, 1970****JUST FOOD**

*Given by Mr Max Grainer, Technical Director of Unilever N.Z. Ltd.  
at Napier, 20th February, 1970.*

Why the topic—because I believe it is the most important and far reaching issue ever to be faced by the population of the world, and specifically our generation.

In outline we will discuss why people farm to produce food at all—how we do so in New Zealand—some aspects of difference in farming throughout the continents.

We will ponder on the population explosion and world hunger, which is largely the cause of the problems I will outline—examine world food production and describe some of the activities and remedies currently taking place, and try to draw a few conclusions.

We in New Zealand farm essentially to derive progressively an income, which enables us to live at a very high standard based on an international scale.

Our excess of agricultural production is so great, that feeding our population is by the by, and a comparatively small amount of our income and energy is expended on producing the food to fill our bellies.

We farm extensively, rather than intensively, by the grazing of various livestock, with a minimum of hand or artificial feeding and housing, since we are blessed with a climate that produces grass nearly all the year round.

Out of 29 countries considered by F.A.O. in the 1968 Review, we lead in output per agricultural worker, being some seven times better than say France or Germany. Before we get over-enthusiastic I had better tell you that agriculture output per acre however is not terribly good (I am not talking about economy, but output), where out of 52 countries we are 23rd on the list and though better than the U.S.A. and rather so than Australia, we have only  $\frac{1}{8}$  of the gross agricultural output per acre of Taiwan, and are running very badly behind places like Germany, Denmark and Japan.

Now in international terms our kind of farming is not typical—sure a cow is still a cow, but for instance our brethren in Europe suffer much worse winters and have to house their livestock and hand feed day in day out for a great part of the year.

There are huge tracts of land, enjoying the climate of our latitudes, where the problems are social and political rather than agricultural. Many with peasant communities, lacking know-how, finance and political stability. Others where the eating habits centuries old, and possibly with a particular religious base, are limiting.

Again in the semi-equatorial latitudes there are millions of acres of desert and mountain as in Australia, North Africa and Asia.

For a variety of reasons subsistence farming exists and that means, that filling your belly daily is abnormal and the whole population is continuously preoccupied in surviving from day to day.

World hunger is not pictured so much as large numbers dying without any food, but rather mild to gross under-nourishment with particularly protein deficiency in some major areas, and in these hunger is not news, but accepted as the way of life.

Let us now look at what is meant by the population explosion and where all these people live.

The world population has taken some 250 thousand years to reach the present 3400 million. It was 250 millions by the time of Christ; by the year 1600 it had doubled to 500 millions; this slow growth was due to famine, disease and war.

From the year 1650 the growth rate speeded up, but was under 1% each year until 1950. Since then it has reached 2.3% each year, and at this rate the world population will double by the turn of the century.

*Rapid population growth is therefore a recent phenomenon.*

At the present rate of growth there will be about 6000 million people by the year 2000,

*but where do they all live?*

In 1966 well over half the world's population or about 1800 million lived in Asia, which of course includes China;

only about 274 million live in Africa;

some 469 million live in North and South America;

680 million live in Europe including the U.S.S.R.,

Australia, New Zealand, Oceania, the Near East, etc. at 171 million contribute the rest to make about 3400 million in the whole world.

*When in the scale of time am I talking about?*

Well now for good digestions sake I should say that the question will not arise in our lifetime, which would be long enough for us to stop worrying about it; unfortunately the answer is now and progressively the population is growing at the rate of 2.3% p.a. or 66,000,000 people compounded;

or it has gained momentum in the last three years from 90,000 to 180,000 people per day, every day, and is still growing as a proportion daily;

one tires of statistics—not because they are not true, but the magnitude goes beyond the imagination. Also those of us who

have not seen more populous places cannot visualise crowds of millions of people. The best example I can give you is that of Hong Kong which I had the good fortune to visit some time ago; *3,000,000 people living in 398 square miles or approximately the Heretaunga Plains.*

We should now look at what the world around us produces and eats as illustrated in Chart I:

CHART 1

**WORLD PRODUCTION OF MAJOR AGRICULTURAL COMMODITIES**

	Million Metric Tons	1966
Wheat	282.5	} 748.9
Barley	99.4	
Oats	46.5	
Maize	213.2	
Rice	107.3	} 748.9
Sugar	62.2	
Total vegetable oils and oil seeds	22.1	
Coffee	3.8	
Cocoa	1.3	
Tea	1.0	
Wine	27.4	
Tobacco	3.8	
Milk	375.1	
Meat	71.1	
Eggs	14.6	
Potatoes	241.4	(55.0 on wheat basis)

N.B. All figures exclude Mainland China.

I have shown some items which are not food, but drink, for interest's sake. I have not shown a vast range of other foods like vegetables, because they tend to be regional and peculiar to a people, though the legumes are highly important as sources of much needed protein. For instance we in New Zealand who already have copious supplies of animal protein still eat 6.75lb of peas per head per year as compared with U.K. 3.8lb and U.S.A. 2.4lb.

You will also note that the items listed have a far greater solids content than say vegetable or milk. For instance the potatoes have a moisture content of around 80%, which on a wheat basis, changes the tonnage from 241.4 million metric tons to 55 million.

We have recognised that food grains are by far the most dominant source of food, and particularly in the under developed countries, where together with a little fish or meat they may constitute the total diet. Let us now look at Chart II, which shows the output of grains by world regions. I have put the populations of the regions alongside.



## CHART II

DISTRIBUTION OF WHEAT, MAIZE AND RICE OUTPUT BY REGIONS  
1966

	Millions Metric Tons	Population-millions
<b>Western Europe</b>		345.7
Wheat	44.4	
Maize	18.2	
<b>Eastern Europe</b>		102.4
Wheat	18.1	
Maize	14.8	
<b>U.S.S.R.</b>		233.1
Wheat	100.5	
Maize	8.4	
<b>North America</b>		216.9
Maize	106.2	
Wheat	58.2	
Rice	2.5	
<b>Latin America</b>		253.9
Wheat	10.3	
Maize	32.2	
Rice	5.8	
<b>Far East (excluding Mainland China)</b>		1,051.1
Wheat	16.3	
Maize	14.2	
Rice	92.4	
<b>Near East</b>		154.0
Wheat	18.5	
Maize	4.1	
Rice	2.4	
<b>Africa</b>		274.1
Wheat	3.0	
Maize	14.5	
Rice	2.4	
<b>Oceania</b>		17.7
Wheat	12.8	

It will be seen, that the developed regions like Western Europe have some five units of people for each unit of the "graincake" so to speak.

In the U.S.S.R.—two to each cake; one in Oceania, but thirteen or more people units in Africa, and more than eight in the Far East.

In looking ahead at future food needs and the agricultural resources to produce them we will use the internationally accepted yard-stick, which is "Food Grains", like wheat and rice. These grains provide 52% of all calories when consumed directly, and a large part of the other 48% when consumed indirectly as meat, milk and eggs.

In terms of food energy, grains completely dominate world trade in food. Before the last war the less developed regions exported an average of 11,000,000 tons of grain per year to developed regions. Since

the war the order has been reversed and the developed regions are now exporting some 33,000,000 tons net a year to the less developed regions.

Converting present consumption levels into future terms of production, the output in the less developed regions will have to nearly double over the next thirty years, and the increase alone will be about what the entire world produces today (749,000,000 metric tons now, 1,250,000,000 metric tons by the year 2000); most of this additional output must come from raising yields, and to assess the effort required we can now look at fertiliser needs.

Using a standard rule of thumb for estimating the response of grain to fertiliser, Asia currently using three million metric tons of fertiliser a year would need 27,000,000 by 1980; that is nearly as much as consumption in the whole world, in 1962/63 at 30,000,000 tons; by the year 2000 Asia would need 68,000,000 tons.

In Africa fertiliser consumption would need to go from 1,000,000 tons to 3,000,000 by 1980, and 7,000,000 by 2000.

For Latin America now using nearly 2,000,000 tons, requirements would go to 4,000,000 and 10,000,000 respectively. These different levels of requirement by areas are based on different birth rates, which Latin America leads at 2.9% per annum.

Raising crop yields implies many things; a change in technology—because tropical agriculture is not the same as that of the temperate climates; greater capital inputs per acre, keeping in mind the law of diminishing return; the agrarian subsistence-orientated economy must change to a commercialised market economy; the capital inputs required to raise yields, i.e. fertiliser, pesticides, herbicides, machinery, improved seed must be purchased in the market place, and farm produced goods must be sold in the market place, to finance these purchases.

This change from subsistence farming to commercial agriculture is in effect the process of modernisation.

The “developed” world has never experienced a rate of “natural increase” of total resources comparable to that now facing the “less developed” world.

In Asia, Africa, and Latin America, subsistence farming is the basic and often the whole industry occupying some 4/5ths of the entire labour force to produce even minimum food supplies. You have heard me refer to the market place, where crops are sold and capital goods bought; appreciate that in a country with 80% of its population in agriculture, and only 20% outside, each farm family has as its domestic market only a quarter of a non-farm family. A country with a domestic market of that size can not, whatever its technical efficiency, expect to reach the level of productivity possible as for instance in

North America with twenty non-farm families, plus an export market for each farm family.

One should look at the progress of the yield of wheat and rice per acre over a period, to see if this holds out hope in the near future. This can be seen in Chart III:

**CHART III**

**YIELD OF WHEAT**

	1909/13 lbs/acre	1963/67 lbs/acre
Selected Countries:		
U.K.	1870	3572
N.Z.	1727	2953
Canada	1173	1384
Mexico	335	2125
Tunisia	282	476
Biggest—Netherlands		3914
Smallest—Libya		220

**YIELDS OF RICE**

	1909/13 lbs/acre	1963/67 lbs/acre
Selected Countries:		
Burma, India and Pakistan	1442	1349
Japan	2720	4566
Thailand	1324	1437
Australia	697	5752
Egypt (U.A.R.)	3173	4090
Biggest—Australia	697	5752
Smallest—Puerto Rico	423	599

Clearly there has been material progress in wheat yield, though with exception in developed countries. The exception however is fundamental and leads to one of the most hopeful ventures in recent times.

The International Maize and Wheat Improvement Centre in Mexico developed stiff-strawed, highly fertiliser responsive varieties of wheat, well adapted to that country. These wheats are capable of extraordinarily high yield, when given adequate nutrition and moisture. They solved Mexico's chronic wheat shortage and converted it into an exportable surplus.

Mexican type wheats or derivations of them have spread to North and East Africa, the Middle East, India and Pakistan almost entirely during the last five years.

In West Pakistan the new wheats were grown on some three million additional acres last year. Production was expected to be increased by more than 75,000,000 bushels or enough to provide two thirds of the current food intake for about 10,000,000 Pakistan people.

Similar benefits were observed by a close friend of mine in India last year, where these wheats have started a spiral of agricultural improvements, by providing farmers with a more consistent and profit-

able crop, which puts capital at his disposal for the first time. The Indian farmers are using this to buy fertiliser and hybrid seeds for further improvement as well as the more mundane things like a new bicycle.

The new wheats are putting India in the position of being able to solve her recurrent famine problems, but are presenting some new problems in storage and transportation across the Indian state borders from surplus to shortage areas.

Rice yield has shown less spectacular movement per Chart III except in Australia; unfortunately the latter is not a significant producer by international measure.

Nevertheless most noteworthy agricultural work is taking place in a number of Asian countries and at the International Rice Research Institute founded in 1962 at Los Banos in the Philippines with support from the Ford and Rockefeller Foundations.

There are quite a series of varieties of rice including Taichung Native I, developed in Taiwan, but more recently two varieties which you may have heard referred to as Miracle rice known by the code name I.R. 8 and I.R. 5 (not Income Tax forms). Like the miracle wheats, they are short strawed, very high yielding most responsive to fertiliser treatment, but like most things in life they have a snag; they are susceptible to a number of diseases like Bacterial Leaf Blight, Blast and Virus, and worse still they are not very acceptable from a palatability point of view in South East Asia. I.R. 5 is generally better accepted than I.R. 8.

Nevertheless extensive use is being made of these varieties, and a great deal more research is taking place. If you re-examine Chart III and the yield of rice—Australia, then you will appreciate the value of I.R. 8 and I.R. 5 in Asia where yields of 5000-8000 lbs/acre are being obtained with good husbandry.

The third success story concerns a certain kind of maize or to give it the title by which it is known internationally "High Lysine Corn". This was arrived at by one of those chance mutations and was recognised at the Connecticut Experiment Station some 20-30 years ago, but only recently has the significance of this mutant been realised. High Lysine or Opaque-2 Corn has a changed make up of protein in the kernel, giving it a materially higher level of two essential amino-acids, lysine and tryptophane.

Some quite remarkable results are being obtained in Columbia with new maize hybrids developed with this character. In Columbia the natives of the very poor back country have maize as their sole diet, and have suffered severely from all the recognized symptoms of protein deficiency—bleached hair, swollen abdomen, idiocy, and early death.

The Rockefeller Foundation is conducting a series of field studies in which the regular maize diet is replaced by, or supplemented by High Lysine maize. The results have been truly startling—children in an advanced state of deficiency disease have made a rapid recovery, providing a pointer to a wider use of this maize in all those regions of the world where maize forms a staple part of the diet and protein deficiency, is in consequence common.

Unlike the examples of wheat and rice, this maize gives a 5-10% less yield of weight per acre compared with regular hybrids, though remarkably enough it gives a greater volume for its weight.

Let us re-examine what has been said:

The topic of food is the most important of our times. It ranks with two others not discussed, water and pollution.

We in New Zealand farm to devise a good living; millions upon millions farm to subsist from day to day.

The world can be split into developed and developing regions. The former are not short of food, nor generally of wealth in a monetary sense. The latter are chronically short of both, with odd exceptions.

When we talk of world hunger it is usually a feature of large populations in developing regions. The hunger is not generally outright death, but ill nutrition (exceptions occur like war in Biafra and crop failure in India, etc.)

The population of the world is expanding rapidly; in equivalent terms the whole population of the U.K. more each year and compound. At this rate it will reach 6000 million people by the year 2000 and most of these will be in the developing countries.

Food production is rising, but not at a fast enough rate to provide for current ill nutrition, let alone for marked population increases. Food alone is not enough; it must progressively contain more protein to provide a balanced diet.

We have established that by far the greatest amount of food is in the form of food grains like wheat, rice and maize, with others like barley, oats, rye, millet, and sorghum close behind.

Yields of the main cereals have been increasing more so in the developed regions, until very recent times indeed.

We have high-lighted research and development that has been and is taking place on short strawed, high yield wheat in Mexico, miracle rice particularly I.R. 8 and I.R. 5 and High Lysine Maize all of which are promising to make quite outstanding contributions towards feeding the millions in developing regions, by their own effort.

I have not touched on meat, poultry, milk or fish production as befits a meeting of (not vegetarians) horticulturists.

Where do we go from here—indigestible as it is, we must over, rather than under-produce, and continue to ship surplus food to the needy.

To ship fertiliser and developing fertiliser industries in under-developed countries.

To coax, cajole, direct and implore widely that birth control should be applied and help in every conceivable way with technical aid, not just how to grow food, but how to live.

### A SPARKLING NEW AJUGA

By DOUGLAS ELLIOTT, F.R.I.H. (N.Z.), *New Plymouth*

In the extracts from his thesis on ground cover plants in the Christchurch area, Mr N. W. Drain placed *Ajuga reptans* among the best of these plants. I agree with him wholeheartedly as I have used it myself for some years with great satisfaction.

I am now growing a very attractive variety recently introduced from the U.S.A.

It is called 'Burgundy Lace,' a very good name as the general effect is lacy and there is a touch of wine-red on the leaves. The red is most pronounced on the young leaves and fades with age so that mature leaves have a touch of red in the centre, then green, and finally an irregular border of cream.

Like other coloured varieties, 'Burgundy Lace' develops its full colour only when you grow it in the sun.

In addition to using it as ground cover I am also trying it out as an edging to a container planted with succulents. Even though it is still only a small plant, it is very effective.

Another variety I like very much is 'Variegata', which has rather pale green leaves edged with cream. The leaves make a good contrast for the spring display of deep blue flowers which are lost on the purple-leaved forms. 'Variegata' looks particularly attractive with stone work. It is less vigorous than other kinds.

Like all plants that earn their keep as ground cover, ajuga spreads quickly and so keeps down weeds. I have used it beneath trees and azaleas and also on a slope where it stopped erosion. The common name is bugle, apparently because of the shape of the small flowers.

I have not grown the taller species. *A. pyramidalis*, but from what I have seen of it I judge it to be equally effective as ground cover and showier in flower.



*Ajuga reptans* 'Burgundy Lace'



*Ajuga reptans* 'Variegata'

*Photographs—Douglas Elliott*

**CHAMAECYPARIS OBTUSA 'TETRAGONA AUREA'**

By HUGH B. REDGROVE, *Auckland*

In the December issue of the *Journal* on page 231 appears an illustration with the caption as written above. This name, however, is not correct when applied to the plant illustrated.

During the last few years there has been considerable discussion among nurserymen in New Zealand about the naming of this conifer because there are two golden forms with very similar foliage and yet having distinctly different growth. Both forms are cultivated by nurserymen in New Zealand, but in Britain, Europe and U.S.A. only one of these yellow forms is generally cultivated—not the one illustrated.

L. H. Bailey describes a plant under the above name as follows (although he does not use the epithet 'Aurea'): "A dwarf broad-pyramidal form with crowded irregular branchlet-systems, the branchlets more or less 4 angled and partly golden yellow, the shaded parts green."

E. E. Lord in 'Shrubs and Trees for Australian Gardens' describes the plant thus: "Rich golden foliage in small mossy sprays branching in four directions. Very beautiful; upright habit."

More recently in his book 'Dwarf Conifers' Welch says: "Growth very congested—densely set and closely packed with secondary branches from the axils of both facing and lateral leaves giving the tetragonal cross-section to the twig, from which it gets its name."

I hope that these descriptions will demonstrate clearly that the plant illustrated cannot be the plant described. They all refer to this four-angled character of the foliage sprays while the plant illustrated has more or less horizontal sprays which are flat and fern-like. Most non-technical people refer to the growth as being mossy or moss-like but this character applies equally to both forms so that it is not a distinguishing feature. Those readers who can refer to the new 'Dictionary of Garden Plants in Colour' by Roy Hay and Patrick Syngé and sponsored by the Royal Horticultural Society will find a good illustration (No. 2010) of a plant that appears to be about 6ft high.

The situation has been much complicated in New Zealand, by the fact that for some years Messrs Duncan and Davies Ltd. of New Plymouth have applied the name 'Kojolchohiba' to the plant which is called 'Tetragona Aurea' in Europe and elsewhere, and they applied the latter name to the plant illustrated in the last issue. Some other nurserymen and many garden shops have naturally followed suit.

The Nomenclature Committee of the New Zealand Nurserymen's





*Chamaecyparis obtusa*  
'Tetragona Aurea'



*Chamaecyparis obtusa*  
'Fernspray Gold'

Photographs—Chas. R. Harrison

Association recommended about a year ago, a reversal of these names and the use of a new name for the second cultivar. Duncan and Davies were a party to this and 'Fernspray Gold' was adopted as the new name, taking effect from June 1969. Newly published catalogues no doubt will show this change of name this year.

The golden conifer (as illustrated last issue), now to be called 'Fernspray Gold' is not recorded in horticultural literature and its origin is not known. It seems possible that it may have arisen in New Zealand as a variation of 'Tetragona Aurea' or as a sport from the green *Chamaecyparis obtusa* 'Filicoides' (The Fernspray Cypress). Against this latter theory is the fact that the green Fernspray Cypress has not been yet seen in New Zealand as far as I can trace. In any case the new name will help to identify correctly a very attractive conifer which to most people is even more pleasing than the cultivar under whose name it has been masquerading.

**CAMELIAS—ANCIENT, MODERN AND FUTURE**

*By S. J. SHAYLE-GEORGE, Petone*

Suffering a steady decline at the turn of the century the Genus *Camellia* has made a spectacular return to popularity over the past decade. This rise in popularity has been so far reaching that in New Zealand almost every garden which can be called a garden includes a few of this delightful shrub.

The camellia originated in the Far East, in China and Japan, where it has grown for centuries. Its habitat was the higher slopes of the hills, where adequate rainfall with natural drainage and filtered sunlight provided by the canopy of neighbouring trees, gave it the conditions in which it thrived.

Plants and seeds were taken from China and planted throughout Europe and they became a very popular and desirable shrub. The early settlers to New Zealand planted camellias in great numbers, and specimens of them over a hundred years old are still growing in various locations throughout the country. Trees twenty and thirty feet high are by no means uncommon and have provided useful data for research purposes.

It may well be asked what caused the decline in popularity of the camellia, and I think the answer lies in the fact that the older varieties became unsightly when their blooms, mainly flowering at the extremities because of the lack of pruning and attention, weathered and bruised badly so that the tree was covered in brown and ugly blossoms. Furthermore the trees became too large to groom and to remove the flowers either for picking as specimens or removing the spent flowers.

One of the best attributes of the camellia is that it withstands very heavy pruning and any bush or tree can be kept neat and tidy and to a size fitted to the garden's limitations. My personal view is that a camellia should not be allowed to grow more than six or seven feet high, at any rate unless one is fortunate enough to own a park or a property of considerable size. The biggest and best blooms seem to grow on the smaller plants: it means that they are all within easy reach and can be kept under control and of pleasing proportions.

There was a marked revival of popularity in the camellia in the United States of America approximately twenty years ago and it quickly gained momentum, despite quite serious difficulties with the growing conditions encountered there. They suffer a considerable variation in temperature and conditions throughout the year and growing camellias in many of the States necessarily entails considerable trouble and expense. Glasshouses and heating in the winter and humidifiers and sprinklers in the summer, can be well nigh indispensable, yet nevertheless camellias have increased in popularity to a fantastic degree and

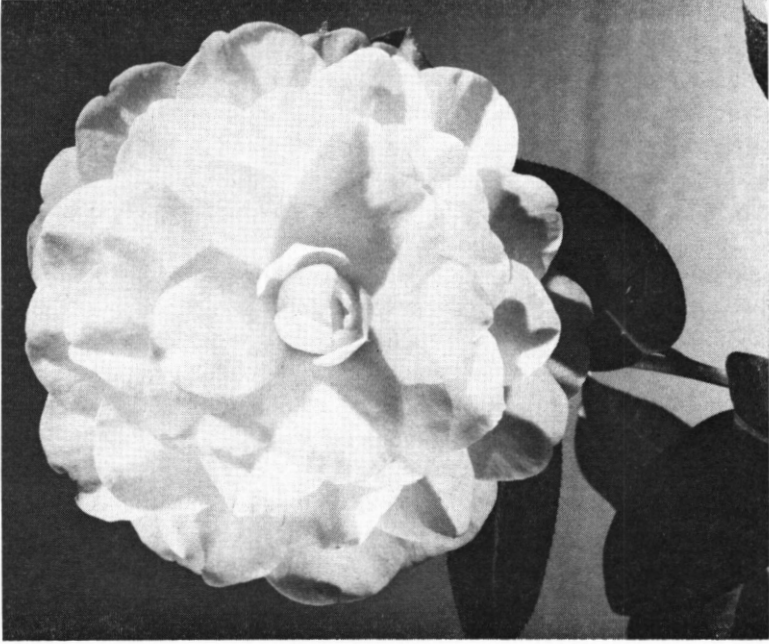
this shows no sign of abating. Americans brought most of the Kunming *Reticulatas* from China to America around 1955 and propagated them successfully by cleft graft methods. New varieties of *Camellia japonica* were produced by selected pollination and thousands of seedlings produced many excellent new varieties. Hybridisation was also experimented with and gave spectacular results.

This then led to the rise in popularity of the camellia in New Zealand and Australia. In the late fifties some of the newer varieties reached this country and sparked the enthusiasm of a few who saw them. Since then the increase in popularity has been even more spectacular because it has travelled throughout the whole of the North Island and quite far south. A band of enthusiasts got together in 1958 under the chairmanship of Colonel Durrant of Tirau. A small South Auckland Camellia Society was commenced which very shortly afterwards changed its name to the New Zealand Camellia Society. In the short space of ten years the New Zealand Camellia Society has become the second biggest in the world, second only to the American Camellia Society. It has now in excess of 1500 members and it is anticipated and hoped that this membership will rise steadily in future years.

The reason for the advance of the camellia in New Zealand is not hard to find. We have a climate ideally suited to the camellia. It must have adequate moisture and good drainage and these main conditions can be provided in many parts of this country. Partial shade is advantageous with certain varieties, but many of them can tolerate full sun as long as the conditions of moisture and drainage are not neglected. And as we can grow camellias so well the advantages of the shrub are overwhelming. *Camellia sasanqua* is normally in full bloom in April and this species is followed by *Camellia japonica* from May to October. They therefore provide the choicest and most beautiful blooms imaginable throughout the whole of our winter season when most plants are dormant. Even in the non-flowering months of late spring and summer the camellia presents a very pleasing picture and enhances the landscape with its neat appearance and beautiful glossy leaves.

Accordingly the modern camellia has completely captivated the typical New Zealand gardener and it can be said with real conviction that the camellia for its part has adopted New Zealand as its domicile of choice.

It may be of interest to readers if I were to give the names of some of the more popular varieties which are grown to-day. These include some of the old varieties which still retain their popularity especially if



*Camellia 'Water Lily'*  
Photograph—Douglas Elliott



*Camellia 'Guest of Honour'*  
Photograph—S. J. Shayle-George

kept pruned and cared for, varieties such as 'Adolpe Audusson', 'Nagasaki', 'Grand Sultan', 'Lady Loch', 'Emperor of Russia Var' and 'Lady Clare' have a special place in many gardens and will continue to do so even though subjected to tremendous competition from newer varieties.

So far as the modern camellias are concerned, I will deal with them under the species, Japonicas, Hybrids and Reticulatas in order to give a comprehensive range of the better cultivars which are available at the present time.

### 1. JAPONICAS:

Over the past fifteen years many hundreds of new Japonicas have been named—most of them in the States, but inevitably a large percentage has fallen by the wayside. Unfortunately many varieties are named without adequate testing in all conditions. A large number, whilst very good varieties, are too similar to others. Some varieties flourish in certain conditions and not in others. Many plants are reared under protective conditions of humidity and temperature and when subjected to the natural elements do not perform so well. Taking all these factors into account it is clear that quite a long period of time must elapse before a cultivar can be classed as a real winner, but I am happy to name the following as being of exceptional merit:

Berenice Boddy	Light pink semi double.
Betty Sheffield Supreme	White with deep pink border peony form.
Dixie Knight	Deep red peony form.
Guest of Honour	Salmon pink very large semi double.
Guilio Nuccio	Coral rose pink very large semi double.
Kramers Supreme	Turkey red large peony form.
K. Sawada	White large formal double.
Laurie Bray	Soft pink semi double.
Miss Frankie	Soft pink peony form.
Mrs Bertha A. Harms	White with faint pink cast large wavy semi double.
Mrs D. W. Davis	Blush pink very large semi double.
Pink Champagne	Soft pink semi double with rosebud centre.
Pink Diddy	Pink informal double.
Reg Ragland	Red large semi double.
R. L. Wheeler	Rose pink very large anemone form.

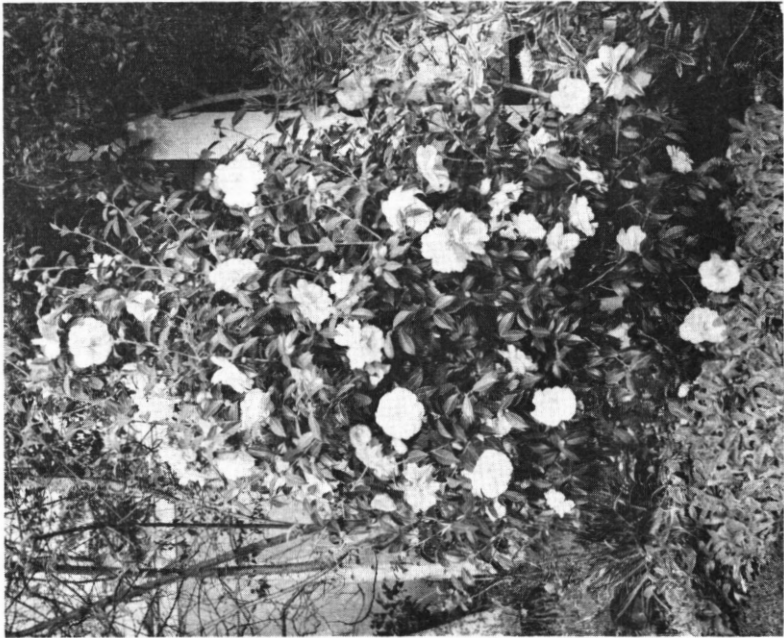
These varieties perform well in the garden, produce gorgeous flowers and are now reasonably priced.

### 2. HYBRIDS:

There is one Hybrid Camellia which should hold pride of place in every garden. This is 'Donation' and it was produced in England in



*Photograph—Douglas Elliott*



*Camellia 'Donation'*

1941. It has a truly fantastic performance. Like many hybrids it is small and slow growing but blooms abundantly. 'Donation' will commence flowering from about six inches high and each year becomes more and more exciting until it literally covers itself in blooms so that it is difficult to see the foliage. It is an orchid pink and can be described as a large semi double flower. Individually the bloom is not spectacular and it does not show to advantage on a show bench. However as a garden subject it could not be surpassed and no matter how choice the things in a garden may be, a good plant of 'Donation' will stand out above all others. Speaking of hybrids generally, one can say that it is in this field that the greatest advance has occurred and they must become increasingly popular. Hybrids are generally very vigorous and floriferous, they stand a good proportion of sun and they bloom from a very early age. Some of the Reticulata Hybrids are enormous and they range from this size down to very small flowers. Some of the well tried hybrids which can be particularly recommended are:

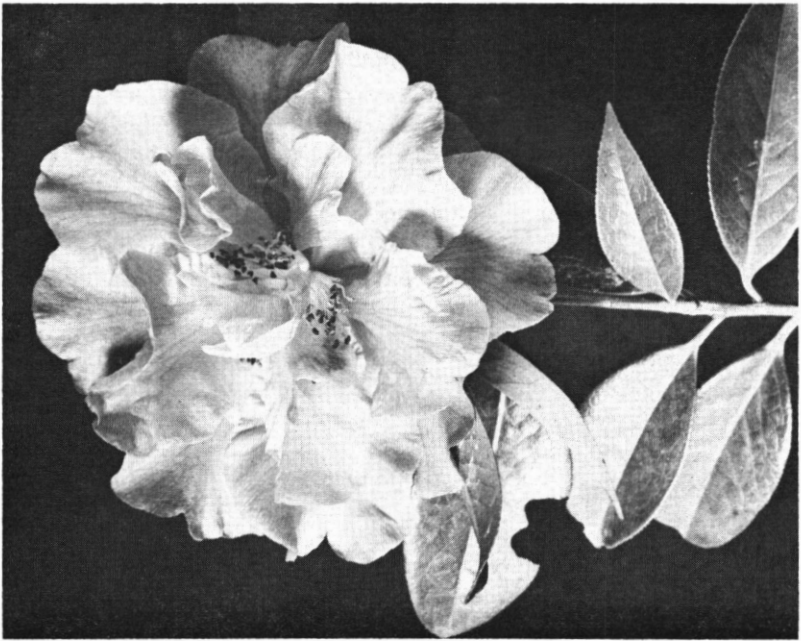
Barbara Clark	Rose pink semi double.
E. G. Waterhouse	Light pink formal double.
Elsie Jury	Pink with orchid undertone peony form.
Francis Hanger	White single orange stamens.
Leonard Messell	Large rose semi double.
Phyl Doak	Rose Bengal large semi double.

### 3. RETICULATAS:

The most exotic of the three main species of camellia is undoubtedly *Camellia reticulata*. Until quite recently 'Captain Rawes' was the only well known Reticulata in cultivation outside China. For centuries they were very popular in China and about twenty of them known as the Kunming Reticulatas were brought to the Western World within the past fifteen years. The reason for the delay is not hard to find. The only method of propagation of these Reticulatas known to the Chinese was by approach grafting, and there were many failures using this method. The Chinese maintained that cleft grafting of the species was impossible and this undoubtedly inhibited their spread to other parts of the world. In the year 1955 the Americans obtained from China plants which they took to the States and propagated successfully by cleft grafting. Specimens were then sent to New Zealand and cultivars such as 'Crimson Robe', 'Purple Gown', 'Buddha', 'Pagoda', 'Shot Silk', 'Confucious', 'Butterfly Wings', 'Willow Wand', 'Cornelian', 'Tali Queen' and 'Chrysanthemum Petal' soon found their way into most of the specialists' gardens. To-day they are freely available and much more reasonable in price. The flowers of most of these Reticulatas grow to enormous size up to 7 inches across and are simply gorgeous specimens. They range in colour from light pink to deep purple red, and in



Photograph—Douglas Elliott



*Camellia reticulata* 'Captain Rawes'



flower are a sight to behold. They require more sun than the other species but they still prefer partial shade for optimum results. Unlike the Japonicas, the Reticulatas have a concentrated flowering season of about six weeks and tend to come out all at once. In consequence established bushes come out in a blaze of colour and are breathtakingly beautiful.

I have dealt with the ancient and modern camellias and would like to say a few words as to the future. It is clearly apparent that the camellia is here to stay and it can only increase in popularity. Knowing its basic requirements, the camellia is easy to grow. It forms a lovely tidy bush even outside the flowering season, and its beautiful flowers grace our gardens through the difficult winter months. So much is known about propagation, hybridising and pruning that all the old disadvantages have disappeared, leaving it supreme in the garden. Thousands of new camellias are being tested in the States, New Zealand and Australia each year and in many other countries besides. From these thousands, there will be many splendid newcomers and the only difficulty will be to concentrate on the best. It would be appropriate I think if I mention some of the new varieties which have hardly reached the market in this country but they are growing in some gardens, they have been in flower and give great promise for the future. They will undoubtedly be expensive to begin with but will quickly become reasonably priced as numbers grow.

#### JAPONICAS:

Elegans Supreme	Rose pink very deep petal serrations.
Elsie Ruth Marshall	Light pink large peony form.
Grand Prix	Brilliant red, very large semi double.
Hawaii	Pale pink peony fimbriated petals.
Tiffany	Light orchid pink large peony form.
Tom Knudsen	Dark red large peony form.
Tomorrow Park Hill	Light soft pink deepening towards edge peony form.

#### HYBRIDS:

Francie L	Rose pink very large semi double.
Howard Asper	Salmon pink very large peony form.
Valentine Day	Salmon pink very large formal double rosebud centre.
Water Lily	Lavender tinted bright pink formal double.

#### RETICULATAS:

Lila Naff	Silver pink large semi double.
Mouchang	Salmon pink very large semi double.
Tom Durrant	Crimson large peony form.
William Hertrich	Deep cherry red very large semi double.

It would not be appropriate to write a general article on any genus without dealing in some way with pests and diseases. So many fine shrubs are so prone to disease and pests that they are hardly worth growing for that reason and to grow them reasonably well a strict spraying schedule must be adhered to. This is not so with the camellia and indeed it is so free of disease and pests in this country that this factor forms one of its distinct advantages. The main pests are leaf roller caterpillar and scale. The scale is very easily kept in check with a spraying of white oil. The caterpillar, whilst a nuisance in making the leaves unsightly, does no real harm and can be kept in check with any of the sprays which control chewing pests.

So far as propagation of camellias is concerned, I have dealt superficially with cleft grafting, but the great bulk of plants in New Zealand are produced from leaf cuttings. This is not to say that one has only to insert a cutting in the ground to get results. It is far more difficult than that and apart from glasshouse cultivation, the only other successful method is to simulate a glasshouse by covering over the propagating box with polythene to keep the cuttings airtight. They take at least two months to become rooted and generally much longer. A callous forms on the cut surface of the cutting, and roots form from the callous. Anyone interested in propagating camellias can easily procure literature on the subject and membership of the New Zealand Camellia Society will provide anything required.



**INTERNATIONAL CODE OF NOMENCLATURE FOR  
CULTIVATED PLANTS 1969  
"CULTIVATED CODE"**

Published by the International Bureau for Plant Taxonomy and Nomenclature of the International Association of Plant Taxonomy, Netherlands.

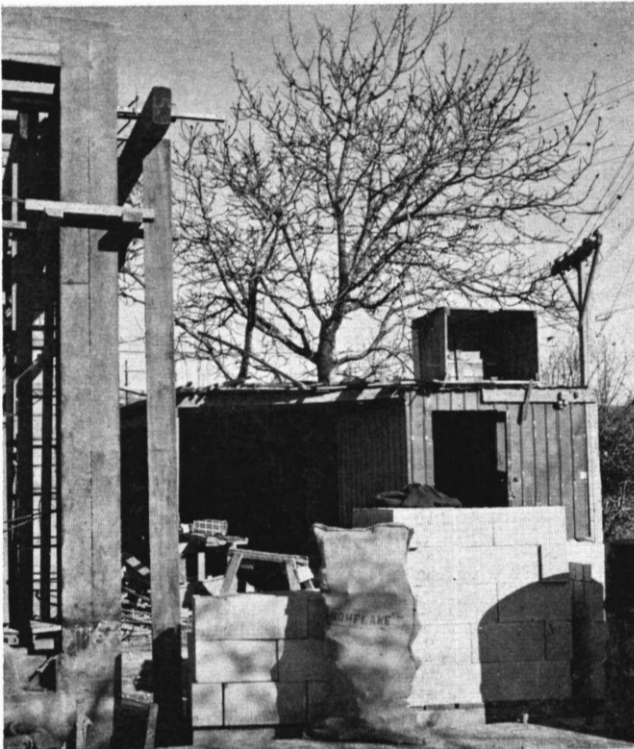
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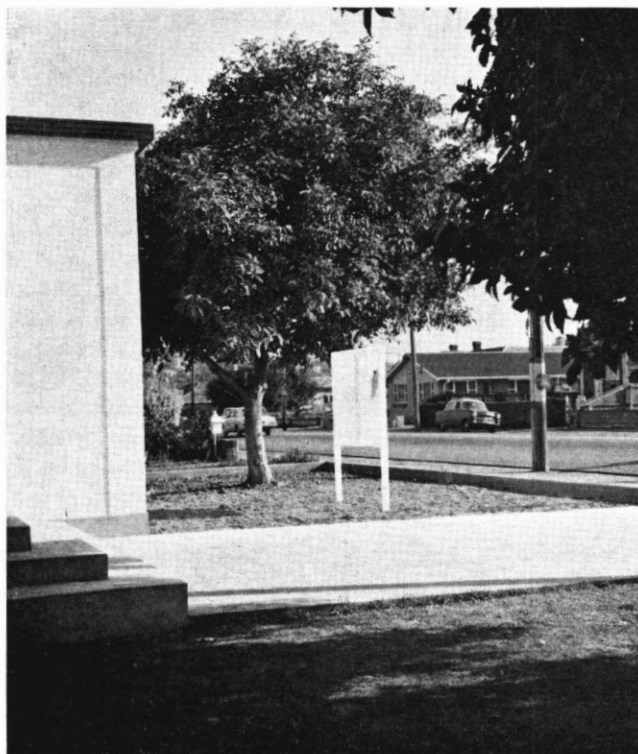
### **A STORY OF TWO TREES**

When we are all so concerned with despoliation it is pleasing to record efforts at conserving natural assets, particularly where the parties concerned have been put to considerable trouble in doing so.

In 1967 a new Anglican Church commenced to rise on a fine corner site in Colombo Street south, Christchurch. Though the two sections involved had been somewhat neglected over the preceding years there were some mature trees and shrubs on them. It was inevitable that some of these would have to go to enable the construction to proceed or because they were not worth preserving, but it was particularly pleasing to see as construction progressed that two fine specimen trees, a liquidambar and a walnut, were being most carefully preserved. These two trees were on the street side of the rising church and though they softened the stark and often dreary scene of building operations they were hardly an unmixed blessing to those concerned in the actual



The walnut tree projecting through the roof of the builder's shed.



The walnut tree after the ordeal. Photograph taken from left of liquidambar  
 The walnut tree after the ordeal. Photograph taken from  
 left of liquidambar.

building operations. Many a time the contractor, sub-contractors, crane and lorry drivers must have blessed (?) these trees, but they were patient and forbearing and those trees came through the building operations unscathed. When the Church was dedicated in November, 1968, they were in full leaf and the Church bore a look of belonging there.

How different with most new buildings, which for many years until trees and shrubs make good growth, appear to have been just dumped on their sites, particularly where flat. The area between the Church and the road frontages has been grassed and foundation and other plantings have been made but at the present the older trees dominate the environs. Nor does the story finish here.

In 1969 it was found possible to complete the scheme and build a hall at right angles to and abutting the main entrance to the church.

At this stage it appeared that the walnut would have to go for this was a small city site on Christchurch's busiest street and there was difficulty in finding space to provide a shed for the contractor without spoiling access to the building operations. The only other alternative appeared to be to put the shed on the grassed area which would have been satisfactory to no one.

Yet no, to the amazement of the many that passed the site, day in and day out, they saw one day a builder's shed with a mature walnut tree passing through the roof; the builder had put his shed around the base of the walnut tree. No doubt this was not the perfect solution for the builder but he overcame all difficulties and the hall rapidly came into being and was opened twelve months after the Church. You are doubtless wondering how the walnut tree came through this ordeal during a year in which only fourteen inches of rain fell. It has come through unscathed and looking at it no one would realise that it had been subjected to such an indignity.

The Church authorities, the architect, Mr John Hendry, the builders, and all those others who helped to preserve these two trees are to be commended for their efforts and perhaps their reward is to see old folk resting on seats in the shade and shelter of the trees. They were only two humble trees in a city rich in magnificent and mighty trees but we are all richer for their keeping.

There is a lesson for all of us here, have a thought, *spare that tree.*



FROM THE MINISTER OF LANDS

### **HISTORIC SITE INCLUDED IN NATIONAL PARK**

Eighteen acres where the old Bealey Hotel once stood has been included in the Arthur's Pass National Park for development as a picnic and vantage spot. The Minister of Lands (Mr Duncan MacIntyre) said today that the area was ideally suited for this use.

"The 18 acres is divided by the West Coast Road and adjoins the Waimakariri River. On the northern side, a reasonably flat grassy area commands a magnificent view of the park and, when developed, it will become a popular picnic spot," Mr MacIntyre predicted.

The last hotel of the several that had been on the site over the years was destroyed by fire a few years ago and, in consequence, the lease was surrendered last year. The site's historic interest dates from its development as a coaching station when the Pass road was built more than 100 years ago and Bealey township itself, in 1865, had a population of 100.

## GROUND COVER IN THE CHRISTCHURCH AREA

(Continued)

By N. W. DRAIN, N.D.H.(N.Z.), Christchurch

(Being a thesis submitted for the National Diploma in Horticulture)

*Cotoneaster conspicuus* 3'

HABITAT Tibet.

This forms a dense cover up to 4 feet high, although prostrate growing forms do occur in a range of seedling grown plants. The white flowers are followed in autumn by large red berries that persist throughout the whole of the winter, entirely untouched by birds. What is considered as the best prostrate form is known as *Cotoneaster conspicuus decora* although it does not appear to be available locally. *Cotoneaster conspicuus* is more suited for planting on large areas such as banks and large median strips, though the more compact forms may be used in smaller areas.

PROPAGATION Seed cuttings and layers.

PLANTING From open ground 2' apart.

*Cotoneaster microphylla* 6" - 12" small leaved cotoneaster.

HABITAT Himalayas.

This is a small leaved cotoneaster with a more compact habit of growth than *Cotoneaster conspicuus*. There are several varieties of this species some of which have particularly small leaves, these being ideal where a ground cover of fine texture is required.

PROPAGATION Seeding cuttings and layers.

PLANTING From open ground 18" apart.

*Cotoneaster dammeri* 6" - 1' Bearberry Cotoneaster.

HABITAT Central China.

This species is quite distinct among cotoneasters for its true prostrate habit, the branches spreading very flat and remaining close to the ground. Ideal for covering large areas, the stems will root at various places if the soil is moist. This characteristic is however, common to some extent of all prostrate cotoneasters.

PROPAGATION Seed, cuttings and layers.

PLANTING From pots.

A variety *Cotoneaster dammeri radicans* has smaller leaves and a tidier habit of growth than the parent plant.

*Cotoneaster horizontalis* 4' Rockspray.

HABITAT Western China.

Without doubt, the most widely planted prostrate cotoneaster, though as a ground cover it has the disadvantage of being deciduous. However, it will in time form a reasonably dense cover up to 4 feet high.

PROPAGATION Seed, cuttings and layers.

PLANTING From open ground.

An important aspect to consider in using cotoneaster as ground cover, particularly where large plantings are contemplated is their susceptibility to infestations of fireblight. This disease does not appear to be particularly troublesome amongst the prostrate cotoneasters but it could possibly become a major problem at some time in the future. Susceptibility to attacks from red spider and certain other pests with consequent disfigurement of foliage and loss of vigour must also be considered where large plantings are contemplated. Plants can of course be sprayed with pesticides but this may not be an economic proposition with extensive plantings.

*Fragaria species* 6" - 12" Wild strawberry  
American strawberry.  
HABITAT Northern U.S.A. and Canada.

It appears that there are at least two species of *Fragaria*, namely *Fragaria chiloensis* and *Fragaria vesca americana*, commonly used as ground cover in the U.S.A. though these plants do not appear to be grown to any extent in New Zealand. These strawberries have a reputation for producing a first rate ground cover providing they are given moist soil conditions and some shade and are ideal for planting under trees and on banks. As with the commercial strawberry, spreading is by means of runners which root in the ground at every joint. The flowers are white followed by some red fruits. Another plant, practically a strawberry is *Duchesnea indica*, a native of Korea with yellow flowers and attractive but tasteless red strawberries. This species is growing at the Christchurch Botanic Gardens. It appears that it would be a satisfactory ground cover for some situations, though not as dense as *Fragaria* species.

PROPAGATION Is by division of runners.  
PLANTING From open ground 12" apart.

*Arctostaphylos uva-ursi* 6" - 1' Bearberry.  
HABITAT Europe, Asia, North America.

This is an evergreen trailing shrub, seldom seen in New Zealand but frequently used in the U.S.A. as a ground cover particularly on sandy soils. A member of the heath family it has pale pink bell shaped flowers followed by red berries and the branches lie very flat on the ground.

PROPAGATION Cuttings.  
PLANTING From pots 2' apart.

*Euonymus radicans* 1' - 2' Wintercreeper  
HABITAT China and Japan.

There appear to be two or three variegated forms of this plant and it is these that are generally available. It is a popular plant for rock gardens and general planting but has not been used to any extent for ground cover work. Although easy to grow under almost any conditions

it is fairly slow to establish and spread and is better for planting in small areas unless a large quantity of plants is available, permitting close planting.

PROPAGATION

Hard and soft cuttings.

PLANTING

From pots or open ground 2' apart.

*Pachysandra terminalis*

6" - 12" Japanese spurge.

HABITAT

Japan.

In the U.S.A. this is considered to be one of the best of all the ground covers, being used extensively for planting under trees in wooded areas. It will often grow in places and under conditions where no other plants will grow, such as in deep shade and conditions of tree root competition. It appears that this plant is not as yet available in New Zealand although some plants were recently obtained and planted in the Christchurch Botanic Gardens. It will probably be some time before their value as a ground cover plant under local conditions can be ascertained.

PLANTING

Is by rooted cuttings set out about 1 foot apart and in good soil these quickly increase to make a dense uniform ground cover, the plant spreading rapidly by means of underground stolons.

*Rosa wichuraiana*

1' - 2' Memorial Rose.

HABITAT

Japan, Korea, Formosa, Eastern China.

This species is the best of a number of roses that are used as ground cover in various parts of the world. Although unsuitable for many situations where ground cover plants are used, *Rosa wichuraiana* is a first rate plant for planting on steep banks to aid in the control of soil erosion. It is a fast grower and the shoots root into the ground as they spread. There are steep hillside areas in the Christchurch district where this plant could be used to advantage.

PROPAGATION

Is by cuttings, layers and seed.

PLANTING

From open ground 6' - 8' apart.

*Rubus tricolour*

2' - 3'.

This is reputed to be a valuable plant for covering large areas rapidly such as under large groves of trees. The leaves of this species resemble those of the English Ivy and the branches are brown. There are no prickles.

*Rubus 'Barkerii'*

HABITAT

New Zealand.

This plant is a native of New Zealand being a hybrid between *Rubus*



*parvus* and some other species. Although *Rubus 'Barkerii'* has not been cultivated to any extent it could be useful and appropriate to use as a ground cover amongst New Zealand native trees. It has a prostrate form of growth, with slender reddish stems and bronze coloured leaves, the leaves being quite a feature particularly in the autumn and winter.

Another New Zealand plant which could have value as a ground cover for certain situations is *Acaena buchananii*. This is a fairly traffic resistant plant and according to one overseas publication has been used to cover a country airfield in New Zealand.

## GROUP 2

Though somewhat inferior to the best species in Group A, there are nevertheless plants of particularly interesting form and foliage in this group, and others are noted for the attractiveness of their flowers. Under ideal conditions some of the species described have a tendency to root into the ground as they spread, e.g. *Erica carnea*, but generally speaking this is not a notable characteristic. Furthermore, their rate of spread is slower than the most rapid colonisers of Group A. It is obvious, however that close planting of these slower growing plants will achieve a satisfactory cover in a reasonable space of time, though cost of plants including handling must be taken into account. Conversely, the individual plants of some species such as *Juniperus sabina* 'Knap Hill' are capable of covering a considerable area and where time is not a factor, these may be quite widely spaced and still achieve a satisfactory cover eventually.

The following list contains only a few of the genera and species which could in fact be included. However, it is representative of the group as a whole and does contain those plants which have proved satisfactory under local conditions.

### Heaths

The hardy European species and varieties of *Erica* and *Calluna* are the only ones to be considered for use as ground cover, the South African ones available in New Zealand being generally insufficiently hardy, too short lived, and of unsuitable growth habit to be of any value. In the British Isles, the heaths are favourite plants for general planting including rock gardens and they are used quite extensively for ground cover planting in certain areas. The Heath Garden at Ness, the Botanic Garden of the University of Liverpool in the Wirral, Cheshire, is a good example of the usefulness of heaths and heathers as ground cover plants. During flowering time, this garden is quite remarkable for its richness and diversity of colour, this of course being a notable feature of these plants when used as ground cover

**DOMINION CONFERENCE 1970**

Proceedings of the 47th Annual Meeting and Conference of Delegates held in Napier on 20th February, 1970.

**PRESENT:** Mr J. F. Living, Dominion President, presided over the Conference with an attendance of 77 members, delegates, representatives of affiliated organizations and visitors.

**APOLOGIES** for non-attendance and messages of goodwill were conveyed to the meeting.

**WELCOME:** was extended by the Dominion President to delegates and especially to Mr C. W. Corner, Mr A. W. Miller (who had done so much in the arrangements for the Conference), Mr and Mrs S. W. Peterson, Mr and Mrs B. Hollard, Mr and Mrs H. J. Clark, Councillor S. N. McKenzie (who, as President of the Institute of Park Administration, had extended warm hospitality to delegates attending our Conference), Mr H. J. Dwight (a visitor from Adelaide), and Mr P. C. Gardner (Dominion President of the New Zealand Nurserymen's Association), Mr H. Osborne (President of New Zealand Fruitgrowers' Federation. The President expressed warm appreciation of the floral arrangements in the Conference hall prepared by the Hawke's Bay Gladiolus Society and thanked the Napier Horticultural Society for the floral tributes presented to the ladies of the official party and the supper to follow the evening lecture.

**Official Opening:** At 10 a.m.

The Hon. Duncan MacIntyre and Mrs MacIntyre, His Worship the Mayor, Mr Peter Tait and Mrs Tait, Mr Gordon Christie, M.P. and Mrs Christie, Councillor S. N. McKenzie and Mrs McKenzie, were warmly received by Mr and Mrs J. F. Living and welcomed to the Conference for the official opening by the Hon. Duncan MacIntyre, Minister of Lands and Forests. Sprays were presented to the ladies.

His Worship the Mayor Mr Peter Tait expressed his pleasure at the Conference being held in Napier and expressed the wish for a happy and successful Conference. He spoke of the improved appearances in those streets where power lines had been placed underground and hoped that in due course the whole country would witness the removal of hoardings from not only city streets, but also open highways. He felt that no one better than horticulturists could take up this cause.

Mr Gordon Christie, M.P. for Napier, joined with His Worship the Mayor in welcoming delegates to the city. He hoped that the Conference would result in benefit to all horticulture and noted with interest the remit pertaining to horticulture in schools. The Hawke's Bay featured considerable horticultural production and he hoped that this subject would be incorporated in the curriculum of the Polytechnic which is being planned for Napier.

In officially declaring the Conference open, the Minister referred to the twofold aspect of horticulture—the provision of food and the improvement of the quality of life. It was imperative that the forest and mountain lands of the Dominion be preserved and that every step be made toward preservation and conservation of trees which play an important part in human life by the conservation of water. He did not wish to contemplate what the Hawke's Bay area would be like if it were not for the protective forests lying to the west of that province. He spoke of the landscaping being undertaken to relieve the monotony of highways and also of the intention to

plant ornamental shrubs and trees along highways to relieve the miles of pine forests through which many of the highways ran. Many of the outstanding native forests must be preserved for all time.

With regard to the development of land; whereas in the past there has been settlement of sheep and dairy units, it was now their policy to settle also units for horticultural production. Experiments were going on in the growing of olives commercially—a crop which has previously been ignored in New Zealand.

As for the preservation of historic and notable trees, the Minister observed that suitable legislation is difficult to write. The preservation of such trees nevertheless was most desirable. It was expected that legislation providing for plant patents would be introduced in 1970. His personal interest in the Eastwoodhill property was real and he agreed that all would desire to see it preserved. Up to the present, however, no suitable formula had been found officially.

On behalf of the delegates present, Dr J. S. Yeates responded to the messages of welcome. Dr Yeates had been impressed by the intimate knowledge and feeling of the Minister on the many aspects of environment which is so important in modern living. He was particularly interested to learn of the plans for the beautification of highways by growing ornamentals and spoke of the beauty of the English countryside enhanced by the preservation and growing of trees.

To many, horticulture implies a flower garden, but it was vitally essential to bear in mind that the horticultural industry of New Zealand is a growing and important part of our national life and economy.

The morning tea break followed immediately after the official opening, during which the official guests mingled freely with delegates.

#### **In Memoriam:**

All present observed a brief silence in honour of and respect of the memory of those members who had passed away during the year.

#### **Procedure Rules:**

Procedure Rules as defined and circulated were adopted.

#### **Dominion President's Address:**

Mr J. F. Living expressed his pleasure at presiding over the 47th Annual Meeting and Conference of the Institute and at having had the opportunity of attending the Annual Conference of the New Zealand Institute of Park Administration where there had been considerable emphasis in their discussions on the subject of horticultural education leading up to the provision of a Diploma in Park Administration from the Universities.

He paid tribute to the wonderful work done by early members of the Institute in establishing the Institute's own courses of examination. He referred also to the dedicated manner in which the present members of the Examining Board carried out their duties and responsibilities. It had been largely through the representations made by the Institute that the present Chairs in Horticulture had been established at Massey and Lincoln. New Zealand is a horticulturist's paradise but there was a real need for deeper education in all branches of horticulture.

The time had come for more extensive development in horticultural production for overseas markets. Many small horticultural holdings could apparently produce much more and be operated more efficiently as a result of a concentrated study and research. The formation of the Horticultural Producers' Council within the Institute had merit and was a step toward strengthening our outlook upon horticulture education.

With regard to the general members of the Institute, the time had come for an examination into new methods of activity at District Council levels to meet the ever changing circumstances in life. In some areas our District Councils were strong and active and in other centres they were purely nominal. Much advantage to all participating would accrue from greater co-ordination of horticultural interests amongst amateur horticulturists.

The Dominion President called upon members to play an even more important part in exerting their influence for the betterment of local and national problems, such as the planting and preservation of trees, particularly in housing subdivisions. Mr Living hoped that the ensuing year would see a strengthening and growth within the Institute, an increase in those taking examinations, and a wider recognition of the national importance of horticulture.

**47th Annual Report and Statement of Accounts** (For year ended 30th September, 1969)

Resolved that the Annual Report and Statement of Accounts be taken as read, having been previously circulated.

In moving that the Annual Report be adopted, Mr J. F. Living spoke briefly on many of the matters touched upon within the report and on behalf of the Dominion Council reiterated the expressions of appreciation and thanks detailed at the close of the report.

Mr J. P. Salinger seconded the motion for adoption, congratulating the Dominion Council on the report and spoke of some of the achievements throughout the year. He looked forward to a continuation of the good work that had been undertaken.

During the discussion that followed, Mr M. R. Boothby referred to the Diploma training programme envisaged by the Institute of Park Administration and considered that it was opportune to bring before the public the aims and objects of our Institute, especially the wider scope of examinations available through our Institute.

Mr I. D. Galloway spoke briefly of the strengthening of membership activities which had resulted from the amalgamation of the Wellington and Hutt Valley District Councils.

Mr H. G. Gilpin, referring to the Oral and Practical examinations 1969, expressed disappointment at the quality shown by those students taking the final Stage III. The standard presented in the Junior and Intermediate Stages was much better. At both Christchurch and Palmerston North there was a considerable amount of work involved in preparing for these Oral and Practical examinations. He spoke appreciatively of the billeting that was offered to candidates in these two centres.

Finality had almost been reached on the revision of the examination syllabuses. Mr Gilpin reassured the Conference that there was no cause for anxiety about the introduction of a Diploma course in Park Administration—Directors of Parks and the Institute of Park Administration itself were fully aware of the value of the National Diploma in Horticulture and pledged their continued full support. The National Diploma in Horticulture was of particular value to those employed and involved in Parks administration.

Mr S. W. Burstall briefly outlined the progress to date on the recording of historic and notable trees. Some of the Forest Service Regional Reports had already been produced for circulation. In due course District Councils and others would be able to obtain reprints of these reports to achieve a wider distribution. The work of Mr Burstall was eulogized and appreciation expressed to him in person.

Mr A. Farnell hoped that, with the wider publicity that would follow, there would be a greater urge to bring about the satisfactory preservation of these historic and notable trees. Mr Farnell also referred to the Eastwoodhill property and hoped that in due course any trust that might be formed to take over the ownership might also consider making available plant material for propagation purposes:

Miss J. M. Dingley reported that the Award of Garden Excellence was now in its 5th year. Altogether 90 plants had received acknowledgment to date, including indigenous native plants, New Zealand raised cultivars and overseas cultivars. In judging the merit of a plant for the Award, it was essential that it be a plant that could be grown with average general attention and results.

Referring to the Report presented by the Wellington District Council at the 1969 Conference, the A.G.E. Sub-Committee considered that the Institute had neither the membership strength nor finance to carry out the scheme proposed. The Sub-Committee had prepared a work sheet as a guide in determining the Award each year. The work sheet provided as follows:

Plants must be outstanding for garden use and capable of being grown in New Zealand under a wide range of conditions. The term 'Outstanding' must be considered under—

1. Hardiness—its ability to grow in a wide variety of soils and climate; in some circumstances, truly valuable plants, having special needs, are considered. In such cases the published notes must have a qualification ("only for frost free areas") ("for sheltered positions") ("for lime free soils") and so on.
2. Attractive garden display—whether for foliage, flowers or fruit.
3. Of good form, for the purpose recommended.

Any reported difficulties in maintaining a plant in a healthy condition must be considered.

They must be plants which experience has shown to be readily available in New Zealand—this need not mean that they appear in nursery catalogues; they can be relatively common in gardens from which propagating material can be obtained.

Mr J. O. Taylor stated that the New Zealand Nurserymen's Association intended to print and circulate to its members information on the plants which receive the Award of Garden Excellence, with a view to bringing these plants more directly to the notice of the public.

Mr Farnell appealed for greater information and help for the A.G.E. Committee from District Councils and Parks Departments.

Mr A. M. W. Greig stated that, arising from the National Development Conference, a Horticultural Committee had been set up with the Minister of Agriculture as chairman. Representatives of the Commercial Producers and Government Departments comprise the Committee. Horticultural producers were now in a position to highlight their problems for round table discussion with the Minister himself present. Mr Greig also referred to the revision of the plant quarantine regulations which would culminate in a Bill being presented during 1970. The opinions of horticultural organizations were being obtained for the Minister in anticipation of this.

At the conclusion of the discussion the motion was put and the Annual Report duly adopted.

**Annual Accounts:** Mr J. F. Living moved that the Annual Accounts be adopted, having been circulated with the Conference papers prior to the meeting. The Annual Accounts show a satisfactory financial position wherein

there had been an excess of income over expenditure for the year \$804.52. He drew attention to the extent of financial assistance received from the Government for examinations and for the Journal. With reference to the grant for the Journal (\$800 annually) it was not wise for the Institute to continue to rely on this source of support, assuming that it was an annual grant. The time might come when the Internal Affairs Department may not be able to give this sum each year. The cost of the Journal to be met out of general membership subscriptions was \$1879.03.

Mr J. O. Taylor seconded the motion and there being no discussion the motion was put to the meeting and carried.

*EXAMINING BOARD REPORT:* The Examining Board Report had been printed and circulated before the meeting. It was thereupon moved by Mr Living, seconded by Mr G. G. Henderson, that the Report be taken as read and adopted. There was no discussion apart from the Dominion President's expressed hope that the Institute would continue to receive the past support to enable it to continue to conduct its own examinations for Diplomas and Certificates.

*EASTWOODHILL PROPERTY:* Mr W. H. Way and Mr R. Berry both of Gisborne, were cordially welcomed and invited to speak specifically on matters relating to the Eastwoodhill property and the proposal to form a Trust which could assume the title to the property and undertake the future responsibility for preservation and development.

Mr Way traced briefly what had transpired up to the present time whereby the property and the horticultural library had been purchased by Mr H. B. Williams from the late Mr Douglas Cook. Mr Williams had since offered to donate the property and library together with a cash endowment to the Institute so that the Institute might then accept the full responsibility for the property and its subsequent maintenance and development. The generous offer had been carefully considered by the Institute but for various reasons the Institute had found that it could not undertake this practical and financial responsibility. The Institute had offered its full support to any local trust or society that might be formed in Gisborne to undertake what the Institute itself had decided it could not do.

There had been much disappointment expressed in Gisborne when the decision of the Institute had been received there. By attending the Conference Messrs Way and Berry had had an opportunity of discussing the Institute's position more fully and, therefore, now had a better understanding of the reasons which led to the decision. However, Messrs Way and Berry asked the Institute to have a second examination into the question and felt confident that sufficient cash funds would become available to ensure the proper upkeep and maintenance of the property. Strong local support, however, was essential. A former attempt to sustain a District Council in Gisborne had not been fully successful.

Some members spoke with knowledge of the property and put forward various suggestions as to how the property could be developed and supported. Some expressed disappointment at the decision reached by the Institute earlier as they felt there was nothing in New Zealand to compare with Eastwoodhill as an establishment of exotic trees. The Institute being a national body could add considerable support and weight to the formation of a separate Trust. Considerable manpower help would be required from local enthusiasts on a



Eastwoodhill.

—National Publicity Photograph

voluntary basis. Mr Way was confident that both finance and practical help would become available if the Institute concentrated on the proposal for either a setting up of a separate Trust or accepting the property itself.

Mr V. C. Davies considered that several members would be willing to donate \$50 as a basic contribution to the setting up of a fund for Eastwoodhill.

Mr S. W. Peterson, drawing from his personal experience with the Pukeiti Rhododendron Trust, considered that it was necessary firstly to consider the type of trust then explore local support and finally prepare the proposition in written form from which wider public support could be solicited.

Mr Way confirmed that there would be funds available to meet initial costs of printed material.

It was finally resolved that the Dominion Council be requested to make a further examination of the original proposal whereby the Institute accept the property for its preservation and subsequent development.

*ASSOCIATES OF HONOUR:* Resolved on the recommendation of the Dominion Council that the distinction of Associate of Honour for the R.N.Z.I.H. be conferred upon the following four persons:

- J. C. Stirling, B.E.M., Wellington.
- S. W. Peterson, Wellington.
- B. Hollard, Kaponga.
- H. Jack Clark, Auckland.

Inscribed certificates were presented to Messrs Peterson, Hollard and Clark amidst the warm congratulations of those present. Mr Stirling being absent from the Conference would receive his Certificate on a future occasion to be arranged by the Wellington District Council.

#### *DISTRICT COUNCIL REPORTS:*

**Wellington**—Presented by Mr J. G. Short:

Advantages had accrued from the amalgamation of the Wellington and Hutt Valley District Councils—widening interest in amenity horticulture—the lead being taken by other organizations, such as Rotary, Jaycees, in matters of civic horticulture which obviously our own District Councils should be doing—the increasing interest of citizens in city beautification and amenities—purely gardening interests are no longer the boundaries of the activities of the Institute, although visits to gardens were always of distinct interest—a numerically stronger executive in Wellington had been able to handle a greater volume of work—competitions around plants and plant life at members' functions had been successful.

**Waikato**—Presented by Mrs B. H. Macdiarmid:

Regular monthly meetings of members had been very well attended—real enthusiasm aroused through garden visits—seminar of garden design—flower of the week display in a public building—identification of plants tabled at members' meetings—participation in the establishment of the Gudex Memorial.

**Auckland**—Presented by Mr T. N. Flint:

Meetings of members had been held regularly over five months of the year—attendances had not been good, although the standard of lecture had been very high—problems of pollution, conservation and preservation in the Auckland area had been considered, but it seemed very necessary for greater action to follow—visits from overseas horticulturists had been enjoyed—floral art judging courses had been successfully conducted—discussion lectures had been arranged for examination students—lectures during 1970 would be based on conservation—land had been purchased at Manurewa by the Auckland Regional Authority for the establishment of a Botanic Garden.

**North Taranaki**—Presented by Mr T. French:

Mr French was pleased to observe that Waikato had followed North Taranaki in introducing flower of the week display—they had concentrated on membership with an increase resulting—a high standard of addresses had been maintained at regular meetings of members—altogether 21 events had been arranged during the year for membership participation—a visit from the Dominion President and Mrs Living during the year had been sincerely appreciated by members.

**Manawatu**—Presented by Mr F. J. Melhuish:

Several very good specialist societies provided excellent opportunity for all horticulturists in Palmerston North—the Institute aimed at two principal meetings each year arranged in conjunction with a prominent horticultural society in Palmerston North and neighbouring localities—excellent meetings had been held in Pahiatua and Levin—overlapping with other horticultural societies had been avoided.

**Canterbury**—Presented by Mr J. O. Taylor:

The strongest horticultural society in New Zealand was domiciled in



Christchurch but nevertheless the Institute had played a prominent and important part in horticultural education throughout the year—visits to commercial undertakings introducing secondary school students to the horticultural industry had superseded the one-day conference that had been held in the past few years—the horticultural careers booklet, produced a few years previously, had been very widely circulated but supplies had now been exhausted—the printing of a booklet on Arbor Day was in hand.

**South Taranaki**—Presented by Mr H. T. Beveridge:

Five circuit meetings had been held in the District during the year—floral display tables had been appreciated—attendances were very good—weekend bus tours were much in favour and fulfilled a most important function—sales tables at each meeting helped defray expenses—there was warm reciprocation between the District Council and the Hawera Horticultural Society.

*THE ROLE OF THE INSTITUTE IN THE DEVELOPMENT OF HORTICULTURE IN NEW ZEALAND:* At the invitation of the Dominion Council, Professor T. M. Morrison (Professor of Horticulture Lincoln College) and Mr J. O. Taylor (Christchurch), members of the Dominion Council, each presented a paper on the role of the Institute in the development of Horticulture in New Zealand including also something of the future of the Institute. The papers were thoughtful considerations of the past record of the Institute's achievements and carefully considered opinions of its future role and activities. They were thought provoking, critically constructive and fully deserving of more detailed study by the Dominion Council in the ensuing year. They would therefore be brought before the Dominion Council at its first meeting following the Dominion Conference.

*Points which Arose from Discussion—*

The Trade Certificate Examination represents a third strata in horticultural education. Horticulture is disappearing from University courses in the United Kingdom. There is an upsurge in technological education in New Zealand.

Mr H. Osborne stated that evolution within the Fruit Growing industry had forced orchardists into becoming extremely exacting specialists and therefore only those fully conversant with the problems of present day orcharding could speak adequately for them. Because of this the Institute could scarcely expect to speak for Fruit Growers in all issues, but nevertheless the Fruit Growers considered that the Institute is doing a worthwhile job in horticultural education and should continue.

Dr J. S. Yeates considered that the National Diplomas, with strict insistence on practical experience, will still be required, but there was a present weakness in the lack of direct education facilities available to students for these Diplomas. If Technological Institutes are able to provide this direct education for students to obtain the National Diplomas then the holders of these Diplomas will be much better horticulturists. Dr Yeates felt that the various horticultural organizations, many of which had stemmed from the Institute, needed a practical meeting point and surely the Institute could provide this. The Dominion Council of the Institute should be composed more strongly of representation from the Fruit Growing, Vegetable Growing and other horticultural industries. It would be only in this way that they could act through the Institute.

Mr W. H. Way put in a plea for continuing opportunities for the man in the street to learn more of his natural environment. In spite of University education and training, very many had scant knowledge of bird life and plant life about them.

Mr C. R. Reader considered that examination candidates and holders of the Institute's Diplomas should give greater support to the institute. Furthermore he regretted the lack of membership support from specialist societies.

Professor Morrison was of the opinion that a student should be educated academically first and then follow on with his practical experience.

Mr J. P. Salinger reminded the meeting that the Institute enjoyed a firm legal status and an accepted standing in official circles, and was able to make representations on horticulture which no other organizations could do. The Institute had been a propagator of other organizations. Whether students were drawn off into University training or into Technological studies, they both required examinations and the Institute could surely continue to provide these. In the 1960's there had been an explosion of scientific advance. In the 1970's there would surely come a consolidation of the advances made. Attention would need to be given to physical environment and how man was going to live in it. Horticulture in the future must expand. Having recently revised the examination syllabuses, to meet the present day requirements of horticultural industries, the Institute should now go back to those industries soliciting greater support. Present conditions had to be improved for and on behalf of those generations that would follow.

*REMITTS:*

(1) *Auckland District Council*

That the Dominion Council investigate the selection of judges by specialist societies, particularly with regard to how they are instructed and how they are appointed by their respective specialist societies.

Following the introduction of the remit by Mr Reader and brief discussion, with the consent of the Conference the wording of the remit was changed so that the original remit was in fact withdrawn and the following substituted.

"That the Dominion Conference ask the Dominion Council to investigate the selection of judges and the running of judges' training classes; and to co-ordinate their findings with registered specialist societies in order to establish a comprehensive register of judges for the different districts."

*Carried*

(2) *Canterbury District Council*

(a) That the Royal New Zealand Institute of Horticulture be urged to initiate discussions with the Education Department in order to explore ways and means of having Horticultural Education extended in secondary schools.

(b) That as a means for implementing this recommendation the Royal New Zealand Institute of Horticulture is urged to act as the co-ordinating body for the setting up of a programme of regular visits incorporating lectures and demonstrations to approved Horticultural centres such as Botanic Gardens, Parks Departments and University Horticulture Departments. These visits would be for the benefit of students who have indicated to their teachers their desire to study Horticulture with the view of taking up Horticulture as a career.

The remit was carried, but during discussion it was stated—it was wasteful to ask pseudo teachers of horticulture to teach the subject in Secondary schools—there were students but no qualified teachers of horticulture—the remit was intended to provide opportunities for those students whose interests already lie in horticulture—it was more beneficial for students to take basic

science subjects at Secondary schools and for horticulture and agriculture to follow later—horticulture and agriculture as subjects were being phased out of Secondary schools' curriculum.

(3) *Auckland District Council*

That the Dominion Council be urged to persevere with their endeavours to ensure the preservation of historic and notable trees and public places in New Zealand, while noting with appreciation the efforts that have been made already.

The remit was carried and during discussion it was re-affirmed that legislation was wanted—furthermore that a deputation should wait upon the Municipals Association asking for legislation to provide protection and to insist that before any tree or trees are cut down the removal of them be referred to local committees of knowledgeable people. Too often trees were removed on the spur of the moment without reference to anyone.

Mr S. W. Burstall stated that approximately 10 years ago within the Forest Service, there was an instruction to their officers to report on any outstanding trees within their areas with a view to the preservation of them. It was possible already for a notable tree to be added to a regional plan within the Town and Country Planning Act.

#### **ELECTION OF OFFICERS**

Patron: His Excellency the Governor General Sir Arthur Porritt,  
Bt. G.C.M.G., K.C.V.O., C.B.E.

Vice-Patron: The Minister of Agriculture the Hon. D. J. Carter.

Dominion President: Mr J. F. Living, A.H.R.I.H. (N.Z.)

Auditors: J. L. Arcus & Co., Chartered Accountants, Wellington.

Dominion Council was duly elected in accordance with the rules of the Institute.

*1971 CONFERENCE VENUE:* The Conference of the Institute of Park Administration will be held in Auckland in 1971. It had become noticeable that since the Conference had been shifted so as to be held on the last day of the Conference week (whereas previously it was held on the Wednesday) the attendance by Directors and Superintendents of Parks had fallen off considerably. The Dominion Council was asked to examine closely into the timing of the Dominion Conference in relation to the Conference of the Institute of Park Administration.

The year 1973 would mark the fiftieth Conference of the Institute and the Dominion Council was asked to consider the suitable celebration of this anniversary.

*ADDRESS BY DR J. S. YEATES:* To close the afternoon session of the Conference Dr J. S. Yeates gave a very interesting illustrated talk on his travels overseas during 1969. Dr Yeates was warmly thanked for the address which had demonstrated that by comparison New Zealand Horticulture ranked very highly and for horticultural beauty New Zealand had few equals.

*BANKS LECTURE:* The annual commemorative Banks Lecture was given in the evening by Mr Max Grainer of Hastings on the subject of "Just Food". (This lecture is published in this issue.) A very warm vote of thanks was conveyed to Mr Grainer at the close of his address, and the serving of supper by the Napier Horticultural Society members brought the day to a happy close.

## DISTRICT COUNCIL NOTES

## WAIKATO

The dry conditions in the Waikato continued until the first appreciable amount of rain for almost four months fell in March. Although losses of plants have not been so great as could be expected there has been a number of plants which have died. In some cases it would seem that the continued heat was the cause of losses even more so than the lack of water; this of course, applies mainly to those plants coming from the cooler temperate zones. Quite a few conifers of varying sizes have died; and many of these were infected by the fungus *Phytophthora* sp. on their roots. In years of normal rainfall these trees would grow more or less normally but this year the combination of the fungus and the very dry conditions caused their death.

Although even now at the end of April only a few inches of rain have fallen the transformation of the countryside from brown to green is amazing and few very obvious reminders of the drought are to be seen.

The Rose Gardens planted last winter in Hamilton and Te Awamutu have progressed well despite the weather conditions and should look well when the World Rose Convention is held in Hamilton next year.

It is interesting to note that there appears to be many more of the birds which normally live in gardens about, and it is interesting to speculate the reason for this. Perhaps the dry weather favoured the rearing of their young, or possibly there was a greater than usual supply of food for the young birds. As we might expect the autumn leaf colour of many shrubs and trees is particularly good this year; normally we do not enjoy the lovely autumn scene to such an extent as those who live in colder areas. Berries seem most plentiful and there are some magnificent displays of various cotoneaster to be seen.

In February Mr R. J. McKeen gave a most interesting talk on Exotic Conifers and illustrated it with a very wide range of specimens which he had collected. At the March meeting several shorter talks were given as a change from one main speaker and this departure from the normal type of meeting appears to have been well received by those present.

In April Mr B. Given, from the Ruakura Agricultural Research Centre, gave a well illustrated talk on Australian Shrubs and discussed the problems of growing these.

The New Zealand Nurserymen's Association held a dinner in Hamilton in April and the numbers attending these functions show the increasing importance of the Waikato as a centre of nursery production and retailing.

The Lily Group of the District Council has held meetings, and enjoyed a most pleasant excursion to see the delightful garden of Mr K. Butler at Karapiro. Whilst the main purpose was to see his *Lilium auratum* and other species in bloom those who attended also saw many of the rare and unusual plants he grows so well.

The development of the Gudex Memorial Park in the Maungakawa Scenic Reserve continues and recently about four thousand narcissus donated by members were planted there. If these are not picked by the public this should ultimately add to the attractions of this area. During the past year toilets have been built, and water and a picnic area are now available. Some recently planted trees and shrubs were lost during the dry weather, but a further planting programme will be carried out this season.

## SOUTH TARANAKI

In *September*, some 40 members and friends were welcomed at Opunake by Mrs J. S. Hickey—the first part of the programme being devoted to the interests of the home gardener. Hints on the growing of vegetables were given by Mr R. D. Chamberlain of Hawera, who presided over the meeting; the cultivation of roses was the subject chosen by Mr T. A. Snowdon, of Inaha; and the growing of potatoes and caring for lawns were the two subjects to which attention was given by Mr H. T. Beveridge of Hawera. All the speakers gave hints on sprays, manures and plant foods required, and answered questions.

Striking and beautiful floral arrangements decorating the hall were a feature of this meeting; and a bench of specimens featured flowering rhododendrons, camellias, genistas, kniphofia leucospermums, *Stachyurus praecox*, Chatham Island lily, iris, *Boronia megastigma*, ranunculi, jasmine, azaleas, and many other of the lovely spring flowers that make this season so delightful.

The second part of the programme featured a description of a visit to Australia by Mr and Mrs A. J. Upson of Awatuna. They showed colour slides, accompanied by a taped commentary, of the Sydney Royal Show, La Perouse, Mt. Gambier, Adelaide, Broken Hill and many other places.

On 19th *October* some 80 members held their first "garden prowl" of the season when, in bright sunshine and chill wind, they gathered at the home of Mr and Mrs J. G. Kenyon of Eltham Road. Here against a background of Mt. Egmont they were greeted by smooth lawns, gaily flowering garden beds and young trees and shrubs. At the back of the house a rose garden drew visitors on to follow further paths and led them to a river bank planted with young rhododendrons, azaleas and mimosa in flower and many other trees and shrubs in variety. The passing motorist must have watched this garden grow for several years to become the beauty spot that it is, and visitors were loud in the praise of its development. Mr Kenyon piloted the party round his garden.

Wiremu Road provided the next stopping point, to visit the garden of Mr and Mrs Butler and there to admire a stone wall built of boulders found on the property, shattered by blasting, and then cleverly built into an attractive wall for a terrace. Here were pebble gardens, gay umbrellas on the lawn and flowering shrubs backed by tall dark pines.

After lunch came a visit to the lovely garden of Mr and Mrs B. Hollard at Kaponga. Planted on the slopes of Mt. Egmont, here is a garden of some five or six acres full of treasures in great variety: many in full bloom, others rich in the promise of bloom to come. Azaleas, rhododendrons (many of them species), camellias, flowering shrubs, and tiny ground-covering plants along every mossy path—plants which have their real homes in many countries throughout the world growing happily in close association with our own natives.

*December* 7th saw another party visiting—to the home of Mr and Mrs N. K. Macleod of Manaia to admire Mr Macleod's beloved roses and Mrs Macleod's river-bank garden of 'beloved everything'. Later, the party visited Dawson's Falls to enjoy mountain walks and talks.

The first day of *March* began outdoor activities for 1970 when some 35 members set off for a garden prowl to Stratford. Titled a "Mystery Trip", the first visit led to Hamlet Street where at the home of Mr and Mrs C. H. Shaw colourful flowers and very luscious vegetables were much admired. Just across the road was found a charming little dell—a comparatively short time ago merely a blackberry patch, now a green dell bisected by tiny streams of water and coloured by gay flowering beds and shrubs. The work of three ladies whose

gardens back on to this no-man's-land, the clever fingers and kindly energy of Mrs W. F. Hay, Mrs A. Rose and Mrs A. Harris have created this little pleasure out of what was once a prickly eyesore.

Next the party visited the garden of Mr and Mrs J. Devine of Miranda Street to admire a pebble garden full of charming little conifers and hebes, and many lovely trees and shrubs; a golden elm, *Chaemaecyparis obtusa* 'Crippsii' ablaze with gold, an unusual *Cedrus deodara* 'Aurea' with sunny tints, a graceful *Chaemaecyparis lawsoniana* 'Silver Queen', the grey-green of the million dollar gum.

Then for the begonia lover, the highlight of the day in the glasshouse in the garden of Mrs D. Goble. Here was a veritable blaze of colour and variety; pinks, yellows, whites, reds and bi-colours—begonias en masse. As a foil to the lovely flowers, rex begonia with the richness of its leaves and the variety of its foliage. One noticed cameras trying to capture particularly lovely blossoms.

Then to Celia Street, to see the garden that won for Mr and Mrs Tonks first prize in the recent garden competition. Here were smooth green lawns, rock gardens with many treasures, beds gay with flowers, and a very charming little picture painted on the lawn with growing things; ajuga on rocks, cactus, dianthus, and a small beech tree—a garden portrait with an ikebana flavour.

Last "mystery" for the day disclosed brilliant green lawns at the home of Mr and Mrs R. A. Sangster of Swansea Road. Here, too, were conifers, a very unusual bamboo, gay dahlias, lovely philippennense and formosanum lilies and a young kauri—straight and slender.

"Harvest Festival" was the theme for the next evening meeting on 21st April when some 40 members were welcomed at Auroa by the President, Mr Syme of Hawera. Hints on the growing of vegetables were given by Mr R. J. Haddy of Hawera. Recommending vegetable gardeners to take as their maxim "Feed, Weed and Breed", the speaker gave hints on the choice of stock, choice and application of manures, times of planting and hints on harvesting. Cultivation of citrus fruits and control of pests were discussed by Mr Syme, and details of the cultivation of apples with the characteristics of different kinds was given by Mr J. H. Barnard of Hawera, who showed numerous specimens to illustrate his points. The speakers, with the assistance of Mr H. T. Beveridge of Hawera, answered questions on a variety of subjects.

A large bench of specimens from members' gardens was discussed by Mr B. Hollard, A.H.R.I.H. (N.Z.) of Kaponga. He named *Cornus capitata*, the Himalayan strawberry tree, and *Arbutus unedo*, the Irish strawberry tree, which also grows in Corsica: *Pittosporum ralphii variegata*; *Hydrangea quercifolia*; *Libertia ixiodes*; *Tricyrtis hirta nigra*, the Japanese Toad lily, *Rhododendron*, 'Yellowhammer', proteas (*nerifolia*, *mellifera*, *compacta*, *pulchella* and *Longifolia*); gypsophila; *Comprosmia repens*; hebes; poinsettia; *Banksia occidentalis*; jasmine; plectantra and many others.

The second part of the evening was devoted to colour transparencies of a recent trip by Mr Hiestand of Auroa with some slides of special interest to horticulturists—the growing and harvesting of pineapples and sugar cane in Hawaii, and the growing of coffee beans, bananas and papayas. Also shown were scenes of New York, Los Angeles, St. Louis and Denver. Then the camera moved on to Switzerland with its beauty of snow-capped mountains and crystal clear lakes.

Another April highlight was a day trip round the mountain when members had first gathered at "Marunui", the home of Mr and Mrs C. G. Washer of Oaonui. The lovely old trees in this extensive garden were much admired. Then, after lunch at Paritutu Park, New Plymouth, the party was joined by Sir Harry and Lady Blyde. As Chairman of the Taranaki Harbours Board, Sir Harry gave

a most interesting and comprehensive survey of works at the Port of Taranaki, pointing out areas of reclaimed land, the 60 feet in diameter concrete base for the smoke stack which is to rise to a height of 650 feet and to dwarf Paritutu—and the three large tanks which are capable of holding 6,000,000 gallons of condensate. The party also visited the new breakwater.

On the homeward journey, the party visited the garden of Mr and Mrs C. Ludeman of Inglewood.

### WHANGAREI

*A SPECULATIVE NATIVE: Ipomaea palmata* a plant of the Convolvulus family which is confined to Northland's eastern sea coast, and islands, has bloomed. Grown from a small plant, it is now established on poor dry and very sunny soil at the foot of *Eucalyptus cinerea*. These conditions are as close to those it favours in nature, as I could provide. At Matauri Bay, where first seen in bloom, its long slender cord-like stems sprawled through the short native grass and were decked with its three inch wide rosy purple stars, with deep purple, almost black, centres—an unforgettable sight. It must be kept rather starved to get best colour in the flowers.

### FEBRUARY

Mrs Mary Sanson, F.R.I.H. (N.Z.) gave us a lively picture of her recent travels in the South Island.

Landing in Picton with their car, they journeyed to Blenheim where they saw the very well laid out rock gardens, with their wonderful display of New Zealand alpine plants. From Blenheim they took the Wairau Valley road to Tophouse and thence to Nelson where they enjoyed the parks, and especially Queen's Gardens, with its two Atlantic Cedars. From Nelson they went to Karamea on the West Coast, where they were surprised to see two Waratahs, proof of the mild climate in that area. The stoney country, with rocky beaches and heavy seas rolling onto them were not as inviting as our own. The white-baiting season was in full swing with every vantage point manned to capacity, so that it would seem almost impossible for any to escape.

The Heaphy Track through dense bush was then explored. There were many items of special interest here, a Nikau palm 70 feet in height, beautiful specimens of kamahi (*Weinmannia racemosa*) a sister tree to our northern toa-toa (*W. sylvicola*), masses of the smaller flowered *Clematis parviflora* and *Hebe elliptica*. Large stands of *Dicksonia squarrosa*, the hard tree fern, were especially noticeable with their new-fronds uncurling. Also in the area they saw twenty-five peacocks and some donkeys—certainly an unusual combination! Further south at Lake Matheson, they made acquaintance with one of our most beautiful ferns—the Prince of Wales feather—a plant of colder moister situations than we have in Northland. The lakes of Otago were much enjoyed, especially Wakatipu, its gardens and the Douglas firs at Queenstown. Not so the road over the Crown Range, which horrified Mrs Sanson. The wild lupins and brooms were, however, a compensating sight.

The trip up the east coast took them through the drought stricken areas about Timaru. Christchurch's beautiful gardens and trees, especially the copper beeches, were much admired. The wonderful coastline at Kaikoura, with the background of snowy mountains, was an unforgettable sight among the many of this extensive journey round the South Island.

*NEW PLANTS AND HOW OBTAINED:* This was the subject chosen by the next speaker, Mr O. Blumhardt, our Vice-president.

Nurserymen have more chances of obtaining new plants than most people. They are often large growers themselves, and are in touch with other large firms and growers in other countries, from whom seeds and plants are obtainable. He instances a new dwarf rhododendron which has come from Europe, and which might do well here, as well as a new hybrid tulip of a good red colour, called 'Oxford'.

There were still many good native plants which were not on the market, but which were of good garden merit. Such a one was *Pomaderris edgerleyi*, a trailing plant with attractively crinkled leaves, bronze beneath, very good on a bank. Especially good forms of plants often appeared among batches of seedlings and these should be watched for, selected and cultivated.

Kingdon Ward, the famous plant hunter of the Himalayas, was always careful to select seed from extra good plants, so that their progeny were outstanding in quality. Among trees extra good or unusual specimens could be propagated by cuttings. Rimu could be propagated by seed or cuttings but if lateral cuttings were used they didn't make upright trees.

Hybridising was the best way to get new plants. Roses, camellias and lilies were all easy plants to cross. Seed from roses needed a temperature of 40deg.F to germinate, but the little plants flowered when about 4 inches high. *Camellia saluenensis* seedlings flowered in from 2 to 4 years and *reticulatas* in from 2 to 3 years. The seedlings should be in good soil and well fed to get quickest results.

There was always more chance of getting something special if seed was sown in quantity. Rare forms of pohutukawas were so obtained, and *Phebalium* 'Illumination' was another instance of a chance plant of great merit appearing.

**THE FRUIT AND VEGETABLE GARDEN:** Our President, Mrs Katie Reynolds, gave us a very useful talk, with many interesting sidelights on current work among our fruit and vegetables.

In the orchard, summer pruning could be done as soon as fruit was harvested. Plums especially responded to summer pruning, by giving an increased crop. All dead wood in peaches should be removed. Dieback, blast and fire-blight were related diseases. Spray with lime sulphur now and in mid-winter spray with strong bordeaux and red oil. Dead wood should always be removed from any tree, and copper sprays used for bacterial and fungoid diseases. Roses which were bought *last season* should be pruned to shape in February, and then lightly pruned in July. A better shaped and healthier bush resulted.

**DISPLAY TABLE:** Tropical and sub-tropical plants were a feature of our February table. The very hot and very dry weather of this summer has evidently agreed with them, and there were good samples of *Allamanda schottii* from Brazil, *Lagerstroemia* from India, *Nerium* (Oleander) 'Mrs Roeding' from India and Japan, as well as *Erythrina blakei*, *Lantana* and *Hypoestes*. All of these, with the exception *Hypoestes* were grown outdoor. The solitary *Rhododendron lochae* from the Cape York area of Queensland was grown in a pot, and in full bloom was a most attractive sight.

A good bloom of *Phenocoma* from South Africa showed how much the plant enjoys dry and hot conditions.

Hibiscus, *Jasminum azoricum*, Rose 'Picture' *Hebe stricta*, and a most beautiful hybrid clematis ('Lady Betty Balfour') added scent and colour to an interesting table.

*Pomaderris edgerleyi* deserves special mention as a native plant of dis-



tion. Its beautifully crinkled leaves, bright green above, bronze gold beneath, borne on slender bronze haired trailing stems, are most ornamental on a bank where they make an effective ground cover.

### WHANGAREI

**MARCH MEETING:** There was a large attendance of members to hear our guest speaker, Mr Arthur Farnell, well-known as a grower of gerberas, and of rare native plants, as well as for his skill in many other branches of horticulture.

Having recently returned from an extensive tour of famous gardens in England, Europe and California, Mr Farnell was able to compare horticultural practices of his youth in England with those of today.

Mr Farnell then gave us an account of the tour of Europe and England which was organised by the R.H.S., and though mainly to see rhododendrons, many other plants were seen in famous private gardens and nurseries.

Being a grower of gerberas, he was able to look with a knowledgeable eye at the many he saw. He thought our doubles were superior, and though many more singles were grown, they did not have the substance of petal, but the colour range was wonderful, including one with a black centre. The Dutch impressed him as being very skilful gardeners, working on land 14 feet below sea level and with a depth of soil of only 20 inches. No barrows were used in the nurseries, all transport being by boat along the canals. In Paris they saw a wonderful flower show which was set up in a park and ran for six months. Of special interest were the model gardens set out to help people landscape their own gardens. In Sweden they were shown the King's five acres of orchard, with the apples grown on cordons. Here in the ornamental garden Mr Farnell was amused to recognise an old favourite among geraniums—the 'King of Denmark'.

In Denmark he saw the best collection of New Zealand native plants he had met on the tour. The Copenhagen gardens had no less than twenty different celmisias. Great quantities of rape were grown in Denmark, the oil from which was used in the manufacture of margarine. In England the Chelsea Flower Show was the highlight of his visit, as he had seen the first one as a young man, and was very impressed, indeed, by the extent and beauty of the present show. At Kew and Wisley he renewed acquaintance with many plants he had known in the past, some of which he had, himself, grafted.

Bodnant, in Wales, formerly owned by Lord Aberconway, and now administered by the National Trust, might well be considered the most famous in the world. Of 150 acres it has an enormous collection of trees from many countries, especially rhododendrons. Its almost equally famous gardener, Mr Charles Puddle, recently visited New Zealand. Two very attractive colour pictures were shown of *Gentiana verna*, and a deep yellow *Trollius*, and made us wish that our climate were cool enough to grow them successfully. Leonard-slee, the home of Sir Gerald Loder, of Loder Cup fame, was also visited, and here as a winner of this coveted honour, Mr Farnell received "Royal treatment."

A picture of *Camellia* 'Donation' taken in the garden where it was bred was of special interest, and in the same garden we saw the marvellous colour of massed azaleas grown as they like to be grown, in a woodland setting.

Finally on the way home to New Zealand we saw the splendid orchids of Singapore Botanical Gardens.

**DISPLAY TABLE:** In spite of the recent drought the Display Table was packed with plants in great variety.

One that has never previously appeared on the table was the parasitic

plant taihoa or wait-a-while *Cassytha paniculata* with very slender yellow-green twining stems that envelop small shrubs to which they attach themselves by small suckers. It is confined to the extreme north and about Ahipara and Mangonui. Another native which is common along our coasts and is sometimes called native celery is *Apium prostratum*. Leaves of the Tung Oil Tree—*Aleurites moluccana* which produces oil from its crushed nuts was previously largely grown in the Kaikohe area, but though the trees grew they were not a commercial success. They are deciduous and highly ornamental in autumn colour.

*Cortaderia argentea*, the Pampas grass of South America, with silvery to mauve plumes, is very like our native toe-toe. Three foliage plants of interest were the variegated leaves of *Symphoricarpus*, the broad shining leaves of *Melia* and the small, glossy, almost fern-like sprays of *Azara microphylla*, which is easily grown from cuttings, extremely ornamental and long lasting when picked—a good 12ft. tree for a small garden, and responsive to pruning. *Hibiscus manihot* with flowers and foliage is similar to our native *H. diversifolius*, but much larger, from China and Japan. Mr Finlay showed a fine collection of most beautiful hemerocallis in unusual colours.

A conifer of special interest since it is growing on a local golf course and has been the subject of some controversy is the Cook Pine *Araucaria columnaris* (formerly *A. cookii*). Several plants of tropical origin were shown, two species of *Dipladenia* with bright rose flowers, grown under glass, a brilliant pink *Bauhinia* and a shrubby *Allamanda* grown outdoors. Two ornamental grapes, one with lovely deep red autumn foliage, made a good foil for the brilliant pink *Bougainvillea* 'Killie Campbell' from the same garden. The red-leaved grape was *Vitis amurensis*, and the smaller one with brilliant fruit *Vitis heterophylla*.

Sasanqua camellias, bouvardias, *Calliandra portoricensis*, *Lonicera hilderbrandiana*, *Hibiscus*, and *Nerine* species and hybrids made a tableful of colour and interest, to which scent was added by the Himalayan *Luculia grandiflora*.

A special table held the handsome gerberas brought for show by Mr Farnell.

#### QUESTION SESSION

How should *Bougainvillea* 'Madam Clara Butt' be pruned to induce flowering? All bougainvilleas respond to root pruning and for this reason are often grown in pots so that roots are restricted.

How to prune *Nerium* 'Mrs Roeding'? Prune after flowering, removing old growth and all dead heads.

*Photinia* 'Red Robin' has become green? Prune four times a year to promote new growth which will be red in colour.

What is a good mix for a Camellia in a pot? One part of scoria and two parts of peat. River sand may be used instead of scoria, but both should be washed clean of dust, mud or fine particles to ensure good drainage and a friable medium. For manure use Magamp according to directions, and a little fish manure.

Please name the specimens of *Coprosma repens*? One with yellow markings is *C. repens variegata*, and the one with silver markings is 'Silver Queen'

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