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INTERPRETATION
in
LOCAL GARDENS

Jenny Iate

INTERPRETATION IN BOTANIC GARDENS



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Jenny Tate
1983

PREFACE

This dissertation discusses the opportunities for, and benefits of, increasing the interpretive role of Botanic Gardens. The current New Zealand position is reviewed as reported in a questionnaire mailed to New Zealand Botanic Gardens. This situation is compared with the responses to the same questionnaire sent to four Australian Botanic Gardens, and also to the interpretive services offered in New Zealand National Parks.

The report concludes with an analysis of varying options and recommendations for improved services within our Botanic Gardens.

This dissertation is written specifically about Botanic Gardens as it is felt that education and interpretation are important functions of these places. Any park and its users, however, will benefit from an interpretive service. It is hoped the suggestions offered in this report may also be applicable to other park situations.

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Part One

The first part of this dissertation is concerned with the theoretical aspects of interpretation. It identifies current users of Botanical Gardens, what services these users would like offered, and what interpretive services are currently offered.

1.0 INTRODUCTION

"Park interpretation is both educational and recreational. It possesses a quality of entertainment not in a sense of amusement but in a sense of interest, enjoyment and pleasure."

William H. Carr

Within our city parks there lies great potential for both recreation and environmental education. Easy accessibility and free admittance to urban parks means that the opportunity to use them is available to everyone.

Botanic Gardens in particular, with their tremendous resource of plant material, should be able to exploit this potential for education. Plant resources alone, however, are not sufficient to encourage environmental education. Interpretation of resources, enabling visitors to relate them to their own field of experience and everyday life is essential.

Such a service will help contribute the following benefits:

- * The visitor may be assisted in developing a keener awareness, appreciation and understanding of the area (s)he is visiting. Interpretation should help to make the visit a rich and enjoyable experience.
- * Thoughtful use of the recreation resource on the part of the visitor is encouraged, helping reinforce the idea that parks are special places requiring special behaviour.
- * The development of an awareness of nature and through this generating environmental concern and fostering preservation and conservation ethics.

2.0 DEFINITIONS

I have included both the dictionary and my own definitions of 'Botanic Gardens', 'Interpretation' and 'Education' in the hope this will clarify the context in which I use these words over the following pages.

2.1 Botanic Gardens

'a garden organised primarily for botanical research or instruction or both'

Royal Horticultural Society - Dictionary of Gardening, Vol. 1, Oxford, 1951

'... a controlled and staffed institution for the maintenance of a living collection of plants under scientific management for the purposes of education and public research'

Hortus Third. L.H. Bailey et al., Macmillian Publishers, 1978

My definition -

'a garden comprising collections of living plants, normally displayed in an aesthetically pleasant manner, for dissemination of botanical knowledge and research'

2.2 Interpretation

'to bring out the meaning of, explain'

The Concise Oxford Dictionary, Sixth Edition

'an educational activity which aims to reveal meaning and relationships through the use of original objects, by first-hand experience and by illustrative media, rather than simply

to communicate factual information'

Interpreting Our Heritage, Freeman Tilder, 1967

My definition -

'the process by which a visitor's understanding, appreciation and enjoyment of an area or feature is increased through describing or explaining its characteristics and inter-relationships in a familiar way'

2.3 Education

'the process of instruction and training whereby one is prepared for the demands of life'

The Great Encyclopaedia of Universal Knowledge,
Odhams, London

'the act or process of acquiring knowledge, especially systematically during childhood and adolescence'

Collins English Dictionary
Collin and Sons Ltd, Sydney, 1979

My definition -

'the process of acquiring knowledge, predominantly through instruction rather than practical experience'

3.0 BOTANIC GARDEN USERS

"Find out your audience's frame of reference before you try and bring them into your own."

John M. Good

In choosing the most effective interpretive service for a Botanic Garden, something must be known of the people who use the resource. Visitors' ages, motivations in coming and lengths of stay are important considerations when planning a programme.

Such information will also give the Park's manager indications as to the type of groups who aren't visiting the Botanic Gardens. An interpretive service designed to meet the interest levels of everyone in the community should be able to stimulate some of these non-user groups into using the Garden's resource. This extra visitation would be reliant on interpretation that uses non-technical phrases and descriptions plus effective advertising within the community of services offered and features to see in the Botanic Gardens.

Two surveys have been conducted in the Christchurch Botanic Gardens to find out more information on visitors to the Botanic Gardens. The results of these surveys are appended, with some conclusions given below.

3.1 Survey of Patronage

Jolliffe's survey⁽¹⁾, conducted in September 1976, provides information on the size of visitor groups, their mode of travel to the Botanic Gardens, and their visitation period. The survey indicates the activities visitors participated in while at the Botanic Gardens and provides information on the services and features they would like to see offered in the Gardens.

Jolliffe's results showed that few people came to the Botanic Gardens for only one activity. Most were

¹Jolliffe, A., 'Survey of Patronage of the Christchurch Botanic Gardens - Preliminary Results'.

strolling around the Gardens, looking more closely at those features which caught their interest. Very few of the visitors came to study specific plant collections. This information suggests that those people already visiting the Botanic Gardens do so to experience the Garden's atmosphere. If a particular feature attracts their attention, they are stimulated to examine it more thoroughly.

The potential for arousing interest is there, but to develop this potential properly requires some form of interpretation.

The lack of interest expressed by visitors in studying specific plant collections may be due to a lack of awareness that such collections exist and poor interpretation through insufficient labelling and information offered.

Many people on the Friday the survey was conducted, visited the Botanic Gardens for less than one hour. Presumably a high proportion of these short visits would be made by people in their lunch break. Opportunities for such people to participate in short guided walks of less than an hour's duration or lunchtime horticultural demonstrations may prove very popular.

The desire for more information publication, improved labelling and guided walks was common to both weekday and weekend visitors. Once again, this indicates visitors would like to have more interpretive services available in the Gardens.

The conclusion Alan Jolliffe makes from the results of his survey is:

"On the average, visitors arrived at the Gardens in their car, parking it in one of the car parks provided, then stayed in the Gardens up to two hours, visiting those areas that were easy to find. They mainly

participated in very passive activities of strolling and relaxing before leaving.

The results indicate that visitors do not know what a Botanic Gardens should be and how it can help them, while many think of the Gardens as a glorified park. More publicity seems to be needed to educate people about the functions of a Botanic Gardens."

3.2 Kirkpatrick/Coyle - Survey of Leisure and Recreational Activities

The Kirkpatrick/Coyle survey involved making observations and recordings of visitor activities in randomly-chosen locations within the Christchurch Botanic Gardens. These observations occurred between 7am and 9pm at random intervals.

As the survey was conducted over the school summer holiday period, the year-round reliability of their observations may be questionable. In comparison with other times of the year,

- a) there were no school groups present;
- b) there was a possible increase in the number of peer groups of school children; and
- c) there was an increase in the number of family groups visiting on weekdays.

Physical limitations in seeing all of an area or in making accurate recordings during busy periods were also encountered.

From Kirkpatrick and Coyle's observations, the major users were those aged between twenty and forty years and were usually on their own. Many of the weekday users appeared to be people passing through the Botanic Gardens on their way to or from work. These users may also contribute to the high numbers of people walking, the most commonly observed activity.

Results show the highest number of visitors to the Gardens were recorded between 11.00am and 2.00pm. Slightly fewer visitors were recorded between 2.00pm and 5.00pm.

Conclusion - It appears from results of both the Jolliffe and the Kirkpatrick/Coyle surveys that most visitors to the Christchurch Botanic Gardens visit the Gardens to enjoy a pleasant, park-like atmosphere. In neither survey was specific plant study nor the seeking of horticultural information most popular activities. I suggest these findings would also be true of other New Zealand Botanic Gardens.

Consideration of why there is a lack of visitor interest in the plant collections within Botanic Gardens is interesting. I am sure much of it is because most Gardens offer nothing to stimulate further enquiry on the visitor's behalf. From the Jolliffe survey, we find a high percentage of people would like to see in the Christchurch Botanic Gardens ecological and geographical plant collections. It is somewhat ironical that most of the layout of the Botanic Gardens is based on such collections, e.g. native garden, bog garden, primula garden, Australian section.

There is so little information easily available to the visitor explaining the reasons behind the Garden design and the significance of plant groupings. Yet this type of information is exactly what helps to develop a broader interest in one's surroundings and to encourage an environmental awareness.

Interpretive material offered must be to some degree incidental. By this I mean the visitor should be able to 'stumble' upon it, without having to have an initial interest in the subject motivating him or her to go to someone or something to seek information. If strolling is the most common activity in Botanic Gardens, then labels and other forms of interpretive media should be easily noticed and able to attract the attention of someone walking by. They should be short enough to encourage reading, using

simple, unspecialised language. At the same time, they should be interesting enough to stimulate further thought.

4.0 CURRENT INTERPRETIVE PRACTICES

There seems to be little value in compiling a report on education and interpretation in Botanic Gardens if most Botanic Gardens already offer a comprehensive service in this field to the public. In order to be objective with this dissertation, it was necessary to find out what interpretive material is currently available to the public in New Zealand Botanic Gardens, the demand for such material, and the prevalent feeling towards urban park interpretation by park managers.

To obtain this information, questionnaires were mailed to Directors of New Zealand Parks and Recreation Departments who have Botanic Gardens under their jurisdiction.

Some comparison between New Zealand Botanic Gardens and overseas Botanic Gardens was needed to determine how well our Botanic Gardens were serving the public in environmental and ecological education. I made this comparison by sending the same questionnaire to four Australian Botanic Gardens. A pleasing 100% response to both surveys was obtained providing the following information.

4.1 Results - New Zealand Botanic Gardens

These relate to Botanic Gardens in Auckland, Napier, Wellington, Christchurch, Dunedin, Timaru and Invercargill.

1. Six of the seven Botanic Gardens have entrance information boards.

I believe such boards are important as they provide an introduction for the visitor. If arranged carefully, information boards can welcome, inform and offer suggestions to the visitor on features to look out for while in the Gardens.

2. Four Botanic Gardens have most of their plants labelled. Labels normally include plant genus,

species, and sometimes family, common name and country of origin.

3. Three Botanic Gardens have comprehensive information boards for plants of special interest.
4. Four Botanic Gardens provide some form of temporary visual display.
5. Six Botanic Gardens hold gardening and horticultural demonstrations for the public.

These are frequently on pruning (especially roses) and propagation topics. Other successful demonstrations have covered vegetable production and "the inside workings of the Botanic Gardens". The frequency of demonstrations varies according to the seasonal relevance of the topic.

6. Five Botanic Gardens publish some form of general information brochure on the gardens.

These are all free of charge. Three Gardens included in the brochure, or printed separately, a map of the Botanic Gardens. One Botanic Gardens offered printed handouts on special plants or features of interest.

The demand for information brochures varied from approximately 30 per week to 250 per week.

7. The Gardens offering information brochures, maps, etc. made these available to the public through -
 - * enquiry at the office,
 - * visitor centres (where applicable),
 - * Public Relations offices, campgrounds.
8. No Botanic Gardens offer self-guiding nature trails to the public, although two are currently under development.
9. Six Botanic Gardens provide guided tours for school groups.

As demand for these tours is very seasonal, their frequency was difficult to estimate. Limited tours are offered to special interest groups and to the general public. The Christchurch Botanic Gardens provides public tours via

electrically-driven tractor-trailer (the 'Toastrack'). This vehicle is owned, housed and maintained by the Botanic Gardens and hired out to a concessionaire for use within the Gardens. Users are charged \$1.00 for a twenty-minute ride.

Sunday morning rambles are offered on a monthly basis to the public in the Auckland Botanic Gardens.

10. Three Botanic Gardens offer some form of wildlife education - mainly on birdlife in the Botanic Gardens. Wildlife education is usually combined with guided tours on plant life.
11. No Botanic Gardens currently offer any form of horticulturally-orientated holiday programmes.
12. Two Botanic Gardens have regular media contact via the radio; three have regular media contact via newspapers, and five give public lectures by appointment (this usually involves school groups). Six Botanic Gardens provide a service to answer gardening queries. This is usually not advertised but is available on request at the office by telephone, personal visits and through mail.
13. The Auckland Botanic Gardens have the services of a Horticultural Education officer. No other Gardens employ someone specifically for interpretive/educative work. Most other Botanic Gardens spend an estimated 2-5 hours staff time involvement per week with some form of public education.

4.2 Australian Botanic Gardens

The four Botanic Gardens surveyed were located in Sydney, Adelaide, Melbourne and Canberra. All of these Botanic Gardens offer -

- * temporary visual displays,
- * an information brochure (map included),
- * guided tours for school groups,
- * information services answering gardening queries,
- * most plants labelled (genus, species, family, common name, country of origin).

Three of the four Gardens offer -

- * information boards at entrances,
- * special interest information boards,
- * self-guiding nature walks,
- * wildlife education,
- * guided tours for the public,
- * media contact via radio and newspapers.

None of these Botanic Gardens offer public demonstrations on horticultural techniques.

The emphasis of these Botanic Gardens in education and interpretation was in catering for school groups rather than a general public service. From the information supplied, I have been able to include in more detail the other services which each Botanic Gardens offers.

Royal Botanic Gardens, Melbourne -

- * One teacher seconded from the Department of Education to facilitate the use of the Garden's resources by education groups. Teachers may be assisted with excursion planning, information and materials for botanical and environmental studies.
- * A range of teachers' guides, student activity sheets and general information sheets are currently available to assist teachers with excursions to the Botanic Gardens. These include information on topics such as:
 - plant classification and diversity,
 - plant reproduction,
 - trees.
- * Other materials available include plant pressing notes, plant diversity slide set (loan only), posters.
- * One Interpretation Officer who spends most time on adult education services. I presume this person is not a seconded teacher.

Adelaide Botanic Gardens -

- * One Education Officer (a seconded teacher from the Department of Education).
- * Experimental plantations in different parts of the State to demonstrate the plants which can be grown in dry, salt-affected, frosty or windy areas.
- * An active, volunteer "Friends" group who conduct guided tours by appointment.

Royal Botanic Gardens, Sydney -

- * One Extension Officer for public education and interpretation.
- * Two Education Officers and an Assistant Education Officer for work with school groups. I was unable to ascertain whether or not these people are seconded teachers.
- * A Visitor Centre, with:
 - Bookshop (botanical and horticultural books, plants, cards, prints).
 - Enquiry counter.
 - Brochure distribution.
 - Temporary exhibits.
- * An Education Unit offering a comprehensive service to schools. The service is extremely successful with the 1983 predicted demand being twenty-five times greater than supply. In addition to practical lessons on subjects taken from the school curriculum the Education Unit had available -
 - An Education Centre.
 - Summer schools for biology students.
 - A Guide Service for teachers planning senior biology lessons, especially on aspects of Australian biota.
 - A teachers' guidebook, 'Teachers' Guide to the Education Service, Royal Botanic Gardens, Sydney'.

Limited visits by Education Officers to schools for disabled groups and special school projects.

A teachers' resource library (for inservice groups).

Inservice courses for school staff.

Kit loans for high schools comprising tapes, slides and notes to accompany live and dried specimens.

National Botanic Gardens, Canberra -

- * Three officers engaged in interpretive work with a public education goal.
- * One Education Officer working wholly on providing secondary and tertiary level education.
- * An Information Centre (with two classrooms).
- * A centre designed for using horticulture in special education for disabled students, rehabilitation and vocational development programmes for disabled people, and recreation for the elderly and disabled people of all ages.
- * Students' glasshouse, established exclusively for education purposes and containing modern propagation equipment.
- * A handbook - 'Guide to the Educational Resources' prepared for professional educators.
- * A photographic collection, with slides available for school use.
- * Slide/tape programmes for use by visiting schools.
- * Courses in the botany and horticulture of native plants for primary school students.
- * Inservice programmes to familiarise teachers with biological topics most often studied by visiting school groups.

4.3 Comparisons between New Zealand and Australian Botanic Gardens Interpretation Services

The potential of Botanic Gardens as places of education and for fostering environmental awareness seems little developed in New Zealand. Few opportunities are currently available stimulating visitors to learn more about Botanic Gardens or the plants within them.

New Zealand Botanic Gardens seem frequently to be regarded as glorified parks rather than true Botanic Gardens. This is manifest by the general lack of education services available in them and by surveys conducted on visitor attitudes and behaviours.

In comparison to this, of the Australian Botanic Gardens surveyed, all have at least one Education Officer and several also have Interpretation Officers. Much more material in the form of publications and handouts is available in these Australian Gardens. There also seems to be more opportunity for 'incidental' learning through nature trails and displays. It is interesting to note the greater emphasis the four Botanic Gardens place on the educative function of Botanic Gardens, especially in relation to school visits.

The situation in New Zealand is improving, however. Most of the Directors, Supervisors or Curators surveyed expressed an interest in developing the potential of Botanic Gardens for public education. A common opinion was that an Education Officer would be a welcome addition to the Gardens and that the services of such a person was necessary before a valuable education service could be developed.

An important issue facing managers of Botanic Gardens in New Zealand seems to be on whose shoulders the responsibility should lie to develop this educative/interpretive role. Most believe an Education Officer should be seconded from the Department of Education to work in the Gardens. They believe under the present situation there is neither the available finance nor staff time within their

Department to provide an effective educative/interpretive service. This is illustrated by the following quotes from Parks Directors, unfortunately not sourced:

"Increased pressure from schools and organisations is strongly being placed on our staff and the Department generally, to conduct instructional tours within the Gardens. We welcome this increased use, as we recognise the role of the Garden as an educational facility as well as recreational. Unfortunately this places additional work on our existing resources to provide this service and we are presently liaising with the Education Department to solve this problem."

".... it is obvious and logical that the education services be undertaken by educationists."

I spoke with a representative of the Christchurch branch of the Department of Education on this matter. He told me there was no likelihood in the near future of sufficient finance becoming available in the Department of Education to finance teachers for such positions.

A stalemate situation has been reached. Heads of Parks and Recreation Departments feel the responsibility to employ an Education Officer rests with the Department of Education. Department of Education officials see this as a low priority position and think it unlikely that finance will become available to employ such people. I note with some concern that whilst the Christchurch Museum is considered sufficiently important to have two Education Officers (employed by the Education Department) and the McDougal Art Gallery to have one Education Officer (employed by the City Council), the living material from which much of New Zealand's aesthetic and land-based wealth is derived, as portrayed in Botanic Gardens, is not.

Survey results show the interpretive and educative potential of New Zealand Botanic Gardens is currently underdeveloped. A skilled person working fulltime in this field in the Gardens would undoubtedly be of considerable educational value. It is up to each Parks and Recreation Department to consider how important they regard the educative function of Botanic Gardens to be and to allocate funds for staff and other necessary resources accordingly.

Even on a limited budget and without the services of an Education Officer, I believe much can be done to improve the extent of educative interpretive services offered. I make some suggestions on how this may be done in part two of this report.

5.0 NATIONAL PARK INTERPRETIVE PROGRAMMES

'The interpretation of the environment should have upon the visitor an influence or stimulus which, in turn, should have a beneficial influence upon the landscape and park values through the visitor's awareness, understanding and appreciation.'

National Parks of Canada

Interpretive programmes are well established features in most New Zealand National Parks. These programmes, plus any other interpretive services offered in National Parks, may provide Local Authority Park Managers with ideas for more effective urban interpretation.

Visitor patterns differ between National Parks and Botanic Gardens. People visiting National Parks usually do so for one or more days. Compared to this, Jolliffe's survey of patronage in the Christchurch Botanic Gardens showed an average visitation period of less than two hours. Such differences influence the most effective type of service for each to offer.

Financial allocations facilitating interpretation, and especially holiday programmes, are much greater for National Parks than Botanic Gardens. Each year the Department of Lands and Survey employs specialised seasonal interpreters to run summer holiday programmes in National Parks and Reserves. These people are able to develop fairly extensive programmes.

While National Parks are to be preserved 'in perpetuity ... for the benefit and enjoyment of the public' and 'as far as possible in their natural state'^{*}, Botanic Gardens are said to have botanical, horticultural, educational and recreational roles. The National Parks Authority policy, as written in the Act, is first to preserve the parks, and then, so far as the principle of preservation allows, to permit the fullest proper use and enjoyment of the Park by the public.

^{*}National Parks Act (1980) S3 (1) and (2).

Interpretive Features in National Parks

The first stopping place for visitors to National Parks is usually the Park Headquarters/Visitor Centre.

These places commonly provide for visitors:

- * information on accommodation, weather, public facilities, guided walks, talks, concessionaire services, etc.;
- * orientation by relief model, large aerial photographs, maps and brochures;
- * interpretation by models, dioramas, photographs, specimen collections, live collections, talks and slide programmes, etc.

Every New Zealand National Park has for sale their own Park Handbook outlining aspects of the Park's history, geology, climate, flora and fauna, and special features concerning the Park. These handbooks provide visitors with an introduction to the Park and its landscape, and they also become souvenirs of the visit.

Nature trails are also developed in most National Parks. These are normally self-guiding by way of leaflets or informative labelling. Often there will be several walks which may require from less than an hour to complete up to a whole day in each Park. In this way, a wide range of users are catered for.

Special holiday programmes are run in most Parks during the Christmas holiday period. These programmes place emphasis on creating an enjoyable experience for the visitor while at the same time increasing understanding of and interest in the Park.

Programmes generally consist of daytime field trips into the Park, and often there are evening sessions of movies, talks and slide shows. In the last six years, National Parks have begun to play a more active role in children's interpretation. Lynda Burns, in a report: 'Interpretation for children in New Zealand Parks', has compiled a list of services for children in National Parks. This list is appended.

Interpretation is seen as a legitimate function of National Parks. I quote from the National Park Authority policy statement:

"The experience of visiting a National Park can be greatly enriched by an understanding of its natural and human history and particular character. The Authority aims at fostering public appreciation of Parks through information and interpretation services, which are also a means of encouraging park protection."

For this reason, the public are not charged a fee to participate in holiday programmes. Occasionally, where high running costs of Park vehicles are involved, however, transport costs are recovered on a user pays basis. Information sheets describing each year's holiday programme are available free of charge to the public in advance of holiday times.

Part Two

The second part of this dissertation focuses on the various features of an interpretive service, which Botanic Gardens or Parks may adopt. Where possible, I have included a cost estimate of the resources involved in developing such a programme.

Suggestions for Interpretive Services -

"Information and orientation guide the visitor to better use of his time in the Park, and interpretation to a better understanding."

A.B. Jacobson

6.0 AIMS AND OBJECTIVES

When developing an effective public interpretive service in a Botanic Garden, the aims, objectives and policies of the service must be clearly defined. Consideration must be given regarding the user group to which the service is aimed. Some Botanic Gardens may prefer to concentrate their service on the requirements of school groups, while others may prefer to cater for a wider variety of age and interest groups. Management must also clarify exactly what it hopes to achieve by providing an interpretive service. This gives an overall direction to the planning process.

To give an indication of possible direction, I have included in the Appendix a copy of the aims and objectives of the Education Centre at the Sydney Botanic Gardens.

7.0 ATTENDED SERVICES

"Not having an interpreter in your Park is like inviting a guest to your house, opening the door, and then disappearing."

William M. Carr

With attended services, the visitor comes into direct contact with the Park interpreter. The type of service offered is dependent to some degree on the facilities and resources available within the Botanic Gardens.

7.1 Guided Walks

Guided walks are usually of two types. One type is the pre-arranged walk on a requested topic, usually for a special interest or school group. Such specialised walks require a guide knowledgeable on the topic and familiar with the location of relevant features within the Gardens.

The other type of guided walk is designed to cater for a wide range of interests and is open to all. These walks are usually more successful if based on a theme people can relate to rather than a general tour of the Gardens. Suitable themes for public walks may be:

- * spring flowers in the Gardens,
- * geographical plant groupings,
- * bird and/or insect life in the Gardens.

Trial and error will determine the most popular themes for walks. People participating in the walks will also be able to offer suggestions for other themes they find interesting.

Guided walks for school and special interest groups are often quite technical and should be conducted by an Education Officer or similarly skilled person. General interest walks usually portray broad concepts and inter-relationships, rather than detailed facts. People with a special interest in the theme of the walk, who are familiar with the Botanic Gardens, and who are able to interact well with the public,

would make suitable guides.

Some Botanic Gardens (e.g. the Adelaide and the Auckland Botanic Gardens) have active 'Friends of the Botanic Gardens' groups who, among other things, conduct guided walks for the public on a volunteer basis. New Zealand Garden Clubs may also have many knowledgeable members who are interested in providing a similar service on a volunteer basis.

7.2 Talks

These are classified into two broad categories. The first are educative such as specialised talks to school groups. The other category involves interpretive talks, portraying general concepts and aimed to stimulate interest rather than imparting facts.

The inclusion of talks in an interpretive programme requires more facilities than guided walks. Indoor talks require a large room with seating provision. All talks benefit from visual aids, whether diagrams, displays, slides, films or videos. A slide projector suitable for an average-sized classroom will cost between \$300-\$500 (1983).

If talks are offered only occasionally in Botanic Gardens, managers may decide it is feasible to borrow projectors and equipment from local schools. Alternatively, an outreach service could be adopted in which speakers go out to visit schools or clubs and give the talks using their facilities.

The most important aspect of a talk is the speaker. Someone with a good knowledge and interest in his/her subject plus proficient communication skills is essential. The best venue, visual aids and most interesting subject will be unable to overcome the deficiencies of a poor speaker.

Enlisting services of invited speakers on a voluntary basis will keep costs to a minimum but will require assurance of their public speaking skills.



An experienced interpreter will consider the group members carefully, stopping with the sun at their backs. Children should be invited to step to the front.

Photo: Grant W. Sharpe

7.3 Demonstrations

Demonstrations to the public of practical horticultural skills are invaluable. Demonstrations of rose pruning and fruit tree pruning are invariably greatly appreciated by the general public (pers. comm.).

As gardening is one of New Zealand's most popular leisure time activities, many people are delighted to have the opportunity to learn horticultural techniques first-hand from experienced staff.

Demonstrations may either be held at weekends or during the week, preferably from 11am - 2.00pm when the greatest number are visiting the Gardens. Advertising the date, time, location and topic is essential. This can be done by posters within the Gardens, on community notice boards, in newspapers and over the radio.

A bonus in offering public demonstrations is the 'spillover' effect on casual visitors to the Gardens. People passing may stop to watch the demonstration, thus stimulating

an interest in aspects of horticulture that previously may not exist for them.

Skilled demonstrators are required for each topic and may involve Garden's staff or groups such as Garden Club members. If staff are involved, overtime payments may be necessary, perhaps involving two to three hours work. A demonstration involving perhaps \$30 in wages provides a service to the public far in excess of this cost and much goodwill is generated.

Topics for demonstrations are included as an Appendix.

7.4 Holiday Programmes

Holiday programmes are not currently offered in Botanic Gardens in New Zealand. However, I believe great potential exists for them. The success of summer holiday programmes run in National Parks and local community centres and YMCAs suggest there will be a similar demand for programmes in Botanic Gardens.

Such programmes normally cater for children (except in National Parks) but adults may also be interested. A holiday programme could be based on a concentration of those interpretive services offered throughout the year. For example, guided walks could be conducted several times per day, demonstrations each day and talks every evening according to demand.

Running a holiday programme will involve extra financial outlay. A person (or persons) to develop, co-ordinate and run the programme is essential. If no Education or Interpretation Officer is employed within the Gardens, then special staff will have to be employed to do this. Suitably skilled people may be obtained through student job search schemes or under temporary employment schemes, as well as advertisements in the newspaper. The feasibility of employing people under schemes in which the Labour Department subsidises wages should be explored.

A venue from which to base the programme is also necessary. A Visitor Centre with large rooms for talks and displays would meet this need. Alternatively, a small marquee could be hired for the programme. A venue provides an orientation point for programme participants, a starting point for guided walks, and shelter for talks and exhibits.

The success of a holiday programme is reliant on offering high quality, interesting experiences to the public and on being well patronised. Planned promotional advertising is essential. Promotional channels may include:

- * radio - most radio stations provide free community service advertising;
- * newspaper - many newspapers run a Holiday Activities section as a public service;
- * posters and brochures - on display at such places as schools, camp grounds, Public Relations Offices, Botanic Gardens.

7.5 Children's Interpretive Programmes

"Interpretation addressed to children (say up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate programme."

F. Tilden

Displays for children should be at lower heights than those for adults and be based on topics to which children can relate. Bright colours carefully arranged are attractive and can be stimulating. Children love movement and will be more inclined to study a display that has moving parts or requires them to participate by pressing buttons.



Nature trails for children should involve as many senses as possible and incorporate variety in site stops. Alternatives to looking may be listening for bird calls, listening to silence or trying to differentiate between noises that can be heard. The sense of touch can be developed through feeling different bark and leaf surfaces and textures, and smell through contrasting odours of soil, flowers, leaves, or decomposers.

A children's corner will provide interest for children in a room that might otherwise be filled with 'adult' displays. Such a corner may include displays of birds' nests, birds' eggs, insects and their food, or artwork made by children on aspects of nature.

Cost

An example of approximate costing for either adults' or children's holiday programmes running throughout January is:

Staff - two people employed for six weeks (to facilitate programme preparation also) at the 1983 standard pay-rate of \$5.06/hour = \$2,450 approx.

Venue - tent hire, 6 m x 10 m @ \$100/week (four-week programme) = \$ 400

Miscellaneous - paper, crayons and other contingencies = \$ 500

Total = \$3,350

7.6 Volunteers in Parks

Throughout this section I have recommended the use of voluntary labour to assist with interpretation in Botanic Gardens. Volunteers in Parks have been incorporated very successfully into American National Parks for interpretive work. I believe a similar concept could be equally successful in New Zealand Botanic Gardens.

Suitably skilled and interested people may be members of the public or recruited from organisations such as Garden Clubs or Tecorian groups.

The benefits generated from using volunteers for interpretive services are many. One of the most obvious of these for managers, is the cost saving. The necessity to pay a guide or speaker is reduced and pressure may be lifted from existing staff. As more co-operation develops between Botanic Gardens and community service groups, so too will benefits increase. Good public relations will be established. More people will become aware of the functions and role of Botanic Gardens. Through these the Gardens may receive additional financial assistance or voluntary labour.

8.0 UNATTENDED SERVICES

*"There is that side of learning that
should belong to each of us alone.
There is that side of learning that has
no words.
Out of these comes values."*

Anonymous.

Unattended services are those in which the visitor only comes in contact with the interpreter peripherally, if at all. Instead, visitors are informed by the device that takes the place of the interpreter.

Such services are less expensive in cost and time. However, they should not be considered as a replacement but ideally as a means of expanding the interpretive programme beyond the capabilities of the individual interpreter.

Aspects of Unattended Services

8.1 Publications

Publications relevant to Botanic Gardens may include handbooks, brochures, descriptive leaflets and self-guiding booklets. Dunmire* lists some advantages and disadvantages of using publications as -

a) Publications are a "cold" medium, lacking the warmth of personal contact, seldom demanding visitor involvement with what is being read, or more to the point, the subject being taught. Yet, involvement is a critical ingredient of the learning process, especially if the learning is on a voluntary basis as is true for most park interpretation.

b) Publications are a one-way form of communication.

Direct feedback is lacking; the interpreter has no way of evaluating on the spot whether the reader actually understands, and has no possibility of changing the message to fit the audience.

c) Publications do, however, have a 'take home' value.

They can be read and re-read at the visitor's leisure.

*William Dunmire - 'Interpretive Publications' in Interpreting the Environment.

- d) Publications can be widely distributed beyond the park by taking advantage of commercial outlets, e.g. travel agents, motels, local information centres. When read in advance, publications can orient and sensitise visitors to a park, helping them to make the best use of their time after they arrive.
- e) Publications are sometimes the cheapest tool in the interpreter's mixed bag. If the publication is produced for sale, it may pay for itself or even provide a small income to support some other aspect of the interpretive programme. This is frequently true for the glossy souvenir booklets some parks have for sale.

The types of publication offered in Botanic Gardens are varied.

Information brochures available from public places such as tourist shops, Public Relations offices and camp grounds should encourage people to visit the Gardens and provide information on how and when to do so. The Garden's location, hours of opening and a little information on features to look for will be valuable. A survey conducted in National Parks showed most visitors wanted a map of the park above all else. This may also be true for Botanic Gardens.

Interpretive publications with themes related specifically to the Botanic Gardens, e.g. "Birdlife in the Botanic Gardens", will be interesting and useful and may also have souvenir value. Using diagrams and artwork will enhance any brochure but will be especially beneficial in increasing the readability and understanding of interpretive publications. Nature trail guides are also included under this category.

Coloured slides, especially of hard-to-photograph items, are welcomed as souvenirs and may also be useful as teaching aids for professional educators. Slide/tape combination programmes on particular themes within the Gardens may be popular on a loan basis with school groups and other clubs. As horticulture becomes an increasingly popular school subject, the demand for such programmes can be expected to increase.

Costs

The costs of printed publications depend on the type of paper used, the variety of colours, and the type of artwork incorporated. In the appendices are printing costs for two brochures - one glossy and multi-coloured, and the other typed on coloured paper. A balance must be achieved between cost and appearance, relative to the function of the brochure.

Generally, information brochures should be free-of-charge as they contain material which should be available to everyone. Levying a charge automatically screens out some people. As an information brochure is a form of promotion for the Botanic Gardens, any discouragement to potential visitors is undesirable.

Interpretive publications are often more expensive to produce as they may include photographs and the use of several colours. A small charge or donation will help meet these costs. Systems are used successfully in some parks where brochures to accompany nature trails or publications to guide a visitor while in the park are available on a loan basis. The visitor gets the use of the guide brochure during his/her visit and then returns it before leaving.

Coloured slides have a high production cost and should therefore be sold to at least recover this. A small profit made on slide sales could be used to subsidise the cost of information brochures. Whereas brochures may be obtained through dispenser boxes, having slides available for sale will require some display box in which they can be viewed and someone to sell them and collect the money.

8.2 Signs and Labels

The greatest scope for interpretation in New Zealand Botanic Gardens, under our present resources, may lie in the creative use of signs and labels. With careful design and wording, people already interested in horticulture may be catered for, plus helping develop an interest for those who visit the Botanic Gardens to enjoy a pleasant relaxing environment.

The two main categories of signs are:

- a) Administrative - e.g. information boards giving hours of operation, services, and directional signs.
- b) Interpretive - e.g. plant labels, special interest boards.

Signs are relatively cheap and easy to construct, but are vulnerable to deterioration through weathering, decay and vandalism. Good all-weather signs are expensive. Signs are self-pacing (the reader can take as long as (s)he wants and need only read what (s)he is interested in). They are always available so can provide information at any time.

Their main disadvantage is that they provide only one-way communication. The reader may not understand what is written or may require more information than that provided by the sign. Individual interest, age and education levels are more difficult to cater for than with a personal service.

Types of Signs and Labels

a) Plant labels - Many people visit Botanic Gardens to get ideas of plants to grow in their own gardens. Plants that are labelled will be very valuable to these people and all Garden's visitors. Information on plant labels may include:

- * Botanical name, family name,
- * Phonetical spelling (to encourage people to call plants by their name),
- * Country of origin (or small map showing distribution),
- * Common name and Maori name for New Zealand natives,
- * Information on cultural requirements,
- * Illustration of flowers, leaves or seed.

b) Interpretive messages - interpretive messages have a different function to plant labels. In little over a paragraph they must aim to attract visitors' attention, hold their interest, and provide them with some understanding of the subject. Any mistake in spelling, grammar or content will reduce the reader's confidence in the message and reflect badly on the management.



Photo
Copy

It is interesting to compare methods of plant labelling. The lower photograph provides an example of effective interpretive labelling.



In designing interpretive signs special consideration should be given to the following -

Headlines have the main job of attracting attention. To do this, they should consist of only a few words which are in a different size or colour to the main text.

The text should be written in a conversational style, involving the reader as much as possible, e.g. 'Feel the smooth bark', or 'Can you detect the faint lemon scent?' Unfamiliar terminology should be avoided.

Illustrations are good attention-getters and help clarify the text. Simple line drawings or diagrams are considered the most effective.

Colours are important. Aim for the biggest contrast between the text and background. I believe a sign with a background darker than the text is the most effective as the text becomes the dominating feature.

Good layout of the text can help minimise vandalism. Wide margins left around the text can be costly in materials and encourage graffiti and other forms of vandalism. Using only capital letters makes reading more difficult than when written in lower case. Capitals are best used only to add emphasis to a word or phrase. Dull finishes on signs reduce glare and reflection.

Signs should be free-standing to add emphasis rather than detract from the feature they are describing. Continuity between signs through colour, shape or common materials is important.

Materials for Signs

In choosing sign materials, consideration should be given to the amount of vandalism an area is prone to. If vandalism is common, it may be more economical to use a cheaper, less durable material entailing less costly replacement.

Suggestions for materials are:

a) Metal

- * anodized aluminium - durable, it can be scratched but doesn't deteriorate through weather and decay,

- reproduction of drawing using black and white negatives can be done on the aluminium.

- * silk screening on metal - less durable because printing is done with paint or ink.
- * painting.

b) Wood

- * an easily obtainable resource but may involve expensive maintenance.
- * message can be painted, routed, stencilled, branded or silk screened.

c) Paper

- * inexpensive.
- * not very durable but replacement costs are low.
- * can be protected by laminating the paper between plastic, fibreglass, or dipping in hot paraffin (melting point).

8.3 Self-Guided Trails

Self-guiding trails allow visitors to use the trails at their own convenience, rather than relying on the services of a trained guide. Such trails are supplemented with written text, either as brochures or as signs along the way.

Trails with themes may be more interesting to visitors such as the seasonal trails offered by the Sydney Botanic Gardens. Separate brochures are available for spring, summer, autumn and winter, providing interest and variety for trail users for the whole year.

It is also good practice to vary the distance and time requirements of trails or to offer several alternative routes. Surveys* have shown that many people visit the Botanic Gardens in their lunch break and may appreciate the opportunity to walk a trail during this time.

* Refer Appendices 1 and 2.

All trails require some method of interpretation, explaining the reason for stops to the trail user. This interpretation can be from a personal guide as suggested in the previous chapter, or from leaflets, signs or audio devices.

Leaflets are carried by the user and have text corresponding to numbered or lettered stops along the trail. With this method, only markers are on the trail, involving less opportunity for destructive vandalism. Markers are also less obtrusive than signs and can be ignored more easily if walks are conducted over the same route.

The overall cost of using leaflets for trail interpretation is usually lower than other methods, especially if used on a loan basis. Alternatively, if kept by the visitor, the leaflet may have souvenir value.

To enable use of the trail at all times, some form of leaflet dispenser is required. Markers are commonly 100 x 100 mm or 150 mm diameter lengths of treated timber, stained or painted, and with letters or numbers routed on the top.

Interpretive signs, as an alternative to using leaflets, can be placed at points of interest along the trail. Messages for these should be brief and simple, with only one subject per sign. People not specifically following the trail may still derive benefit from such interpretive signs. This benefit may offset the extra costs involved.

With signs, the interpretive material is always in place for the visitor; however, signs may have to be removed from some stopping sites during their 'off-season'.

Audio trails are used in some overseas park interpretation. Visitors activate an audio device which is located at each stop, or carry around small cassette players with messages corresponding with each stop. The text used is similar to the wording in signs or leaflets, but has the advantage of being able to incorporate special sound effects such as bird calls.

This type of equipment is expensive and prone to vandalism. Difficulties in dispensing will probably mean that cassette-type devices can only be used during office hours.

Examples of Plant Labels and Interpretive Signs



Materials	- 6 mm, oil-tempered, hardboard ground-treated posts	\$15.75
Labour	- Carpenter	7.69
	- Signwriter	15.20
	Total cost per sign	\$38.64

Plant Labels

Materials	-	Screws	\$0.08c	
		Timber stand (treated)	1.80	
		Metal plate (18 gauge)	0.32c	
				\$2.20
Labour	-	Signwriter	2.80	
		Carpenter	1.03	
		Total cost per label		\$6.03



Tree Boards

Materials

Timber, treated	\$10.75
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Labour

Carpenter	7.05
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Signwriter	11.40
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Total cost per board	\$29.20
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Other examples of plant labels and information boards:

- Material and labour costs for these are unavailable.





Notice how the effectiveness of a plant label is reduced by being attached to the object it is identifying, combined with poor maintenance.

8.4 Exhibits



Exhibits are self-explanatory, temporary visual or audio displays in two or three dimensions and interpreting a particular theme.

Two-dimensional exhibits are usually flat panels with a large amount of illustration complemented with brief text. The technique of projecting illustrations and photographs several centimetres out from the text emphasises the picture and adds interest to the exhibit. Two-dimensional exhibits are particularly suitable for the outdoors when small roofs or shelters can be erected over them.

Three-dimensional exhibits allow a much more varied type of display. Live specimens, papier-mache models, dioramas and many other designs can combine to offer an interesting interpretation of a subject. Any text used in the exhibit should be kept brief and simple. Rather than one long passage, the text should be arranged in small passages through-

out the exhibit.

A key point with any exhibit is to keep it simple. Too much information or illustration creates a cluttered appearance, reduces the impact of the exhibit and confuses viewers.

8.5 Media

Other little-developed avenues for park interpretation are local newspapers and radio stations. These channels are useful for giving information on the Botanic Gardens, stimulating interest, and through this, encouraging visitation.

Newspaper articles describing current work in the Gardens or suggesting distinctive features to look for may give visitors to Botanic Gardens a focus for their visit. Perhaps a monthly column of short, pithy titbits on "Happenings in the Botanic Gardens" would be more interesting and readable than regular lengthy articles. A copy of a monthly article by Warrick Scadden* in the 'Christchurch Press' has been appended as an example of interpretation using the media.

Radio broadcasts are another channel for informing about Botanic Gardens. Radio broadcasts are useful because they are a very personal media and can reach the widest cross-sections of the community. Many stations may offer short, regular broadcasts of 'Happenings in the Botanic Gardens' as a community service.

*Curator, Christchurch Botanic Gardens.

9.0 FINANCING AN INTERPRETIVE SERVICE

Interpretation in Botanic Gardens should ideally be a free service to the public. Placing a charge on an activity or the use of a facility automatically screens out some people and discriminates against low income earners. Many visitors to the Botanic Gardens will already be paying rates contributing to the Garden's maintenance. Additional levies made on visitors when arriving at the Gardens will not be very welcome.

Very seldom is there sufficient money to develop an interpretive service to its ultimate capacity. Managers have to make the best use of the finance available, while working towards the pre-established aims and objectives of the interpretive service. Allocations from local government may be supplemented by donations and sponsorship from commercial firms. These donations may be especially useful in establishing exhibits or contributing towards printing costs of brochures.

Mobil Oil Ltd offers environmental grants each year to "those who seek funds to support projects designed to protect, improve, enhance, or understand the New Zealand urban, rural or marine environments".

The 1981 allocations included \$100 for park audio-visual work to Mt Ruapehu, Department of Lands and Survey, and a printing subsidy to the Christchurch Drainage Board of \$500. The 1983 grant allocation is \$14,000. This fund may be available to help set up exhibits in Botanic Gardens. Further information and application forms can be obtained by writing to the Public Relations Officer, Mobil Oil Ltd, Box 2497, Wellington.

Service clubs such as Rotary, Lions and Jaycees may be willing to provide displays or assist with finance and fund-raising. Garden Club members may also be interested in preparing displays or guiding walks. Park concessionaires - tea kiosks, plant shops or similar businesses - within the Botanic Gardens can be other revenue generators.

By developing and increasing an interpretive service a little each year, the capital cost of a programme can be spread over several years. This will also enable better allocation of funds for maintenance. It is much easier to build up a programme gradually as resources allow, rather than have to scale an over-ambitious programme down.

10.0 CONCLUSION

This dissertation has examined current interpretation practices in New Zealand Botanic Gardens. In comparison with Australian Botanic Gardens and with the service offered by New Zealand National Parks, I conclude that the educational role of our Botanic Gardens has not been sufficiently exploited.

With increasing leisure time a feature in our society and with the heightening of an environmental consciousness, I believe Botanic Gardens hold potential for a substantially increased service, not only to school groups but to the public in general. The provision of interpretive services is within the recognised functions of Botanic Gardens, but seems to have been largely neglected in New Zealand.

Cost of additional resources and staffing is the most likely constraint to enhancing the educational role of Botanic Gardens. This dissertation has suggested several avenues whereby additional services may be provided at very little direct cost. With the opportunities currently provided by government temporary employment schemes, by student subsidised employment schemes, and by numbers of people in early retirement seeking a fruitful way to occupy leisure hours, the time has never been more opportune for forward-looking Parks Directors to experiment in the provision of interpretive services within Botanic Gardens.

It is hoped that the suggestions contained within this document may assist in the formulation of policies which will lead New Zealanders to regard Botanic Gardens as even more valuable resources. Resources to be cherished, enjoyed and financed on a basis commensurate with their importance in fostering horticultural, environmental and conservation ethics.

11.0 REFERENCES

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12.0 APPENDICES

1. Jolliffe, A. "A Survey of Patronage of the Christchurch Botanic Gardens - Preliminary Results".
2. Kirkpatrick, Coyle. "Observational Survey on Leisure and Recreational Activities in Parks and Gardens".
3. Suggested Topics for Holiday Programmes.
4. Some National Park Ideas for Children's Interpretation.
5. "Botanic Gardens Walkabout" - newspaper article by Warrick Scadden.
6. Aims and Objectives, Education Centre, Royal Botanic Gardens, Sydney.
7. Interpretive publications and cost estimates.

APPENDIX ONE

Jolliffe, A.G. 1976.

"Survey of Patronage of the Christchurch Botanic Gardens - Preliminary Results".

- an abridged statement from the above of matters applicable to the dissertation.

Method

On Friday 2 September and Sunday 4 September, each of the Botanic Garden's entrances was manned during the hours of opening by a staff member. As visitors entered the Gardens, they were counted and interviewed.

Sample size

Friday 2 September 1976

Total visitors counted	767
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Sunday 4 September 1976

Total visitors counted	1,757
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Responses

Q.1. *How did you travel to the Botanic Gardens?*

<u>Friday</u>	<u>Sunday</u>	
---------------	---------------	--

55%	60%	car
28%	26%	foot
17%	14%	other means, bus or cycle

Q.2 *Do you always have the use of a motor car?*

<u>Friday</u>	<u>Sunday</u>	
---------------	---------------	--

50%	49%	always
30%	23%	sometimes
-	3%	weekends only
20%	26%	do not use a car

Q.3 Where have you come from to get to the Botanic Gardens?

Friday Sunday

22%	1%	work
47%	21%	home
30%	28%	other places

Q.4 How many times have you visited the Botanic Gardens this week?

Friday Sunday

67%	80%	once
23%	18%	2-4 times
6%	2%	5-8 times
2%	-	9-12 times
2%	-	12+ times

Q.5 Are you participating in -

	<u>Friday</u>	<u>Sunday</u>
Visiting the playground	26%	30%
Picnicking	17%	13%
Visiting the Art Gallery	34%	41%
Walking through elsewhere	56%	38%
Seeking horticultural advice	4%	6%
Visiting the tea kiosk	8%	18%

(A special art exhibition was on at the Art Gallery which may account for the high percentage of people in this category.)

Q.9 What activities are you participating in?

	<u>Friday</u>	<u>Sunday</u>
Strolling	85%	90%
Relaxing	38%	69%
Looking at trees and plants	46%	64%
Visiting showhouses	31%	46%
Looking at wildlife	42%	26%
Studying specific plant collections	4%	5%
Riding on 'Toastrack'	0%	1%
Other activities	10%	7%

Q.10 How long is your visit?

	<u>Friday</u>	<u>Sunday</u>
Less than one hour	46%	22%
One-two hours	36%	70%
Half-day	8%	7%
One day	8%	1%

Q.11 *What public education services would you like to see operating in the Botanic Gardens?*

	<u>Friday</u>	<u>Sunday</u>
Guided tours	48%	18%
Informative publications	40%	36%
Public lectures	19%	15%
Informative labelling	58%	30%
Educational displays	42%	24%
Others	4%	8%

Q.12 *What things would you like to see in the Botanic Gardens?*

	<u>Friday</u>	<u>Sunday</u>
Ecological plant collections	48%	22%
Geographical plant collections	35%	17%
Specialised plant collections	36%	24%
Demonstration gardens	48%	34%
Floral displays	38%	31%
Specialised horticultural displays	27%	19%
Botanical collections	38%	22%
Plant trial gardens	29%	8%
Others	2%	6%

Q.14 *Have you a garden at your place?*

	<u>Friday</u>	<u>Sunday</u>
Yes	96%	83%
No	4%	17%

APPENDIX TWO

Kirkpatrick, K.; Coyle, P. 1982.

"Method and Results of "Observational Survey on Leisure and Recreational Activities in Parks and Gardens".

- Christchurch City Council.

- an abridged statement from the above of matters applicable to this dissertation.

Method

This survey was totally observational. From 7.00am until 9pm, for approximately one month in the 1981/82 summer holidays, observations of visitor activities were made at random times and locations in the Christchurch Botanic Gardens. Recordings were made of:

- * number of visitors observed,
- * age group (less than 20 years, 20-40, 40-60, over 60 years of age),
- * group composition (peers, family, couple, individual),
- * weather conditons at time of observation,
- * activities:

examine - including taking photos, reading plaques, examining foliage, interacting with gardeners,

appreciate - glancing at or appreciating plants.

A sense of interest taken in surroundings,

walk - traversing an area,

seated - utilisation of,

self - primary involvement with self or other people, e.g. reading, sunbathing,

- indirect use of the Gardens.

Results

		<u>Frequency</u>
Age	< 20 years	7.8%
	20-40 years	49.8%
	40-60 years	27.0%
	> 60 years	15.4%
Group	Peers	18.7%
	Couples	24.9%
	Individuals	36.3%
	Families	20.1%

		<u>Frequency</u>	
Activity	Walking	35.5%	(These were the three most common activities.)
	Appreciating	22.3%	
	Examine	7.6%	
			- activity depended on the place of observation, e.g. showhouses - major activity was to examine.

Activity x Group

Activity	Group			
	Peer	Couple	Individual	Family
Examine	20.0%	32.3%	23.9%	23.9%
Appreciate	15.2	31.6	28.0	25.2
Walk	20.5	21.5	40.0	18.0
Seated	11.9	23.9	54.5	9.7
Self	21.8	20.1	37.9	20.1

Activity x Age

Activity	Age			
	< 20	20-40	40-60	> 60
Examine	3.2%	41.3%	37.4%	18.1%
Appreciate	3.5	46.8	31.3	18.5
Walk	9.4	48.8	26.5	15.4
Seated	5.2	34.3	29.9	30.6
Self	12.6	68.9	16.0	2.4

Activity x Time

Activity	Observation Period			
	7-11am	11am-2pm	2-5pm	5-9pm
Examine	14.8%	43.2%	33.5%	8.4%
Appreciate	14.6	44.6	36.4	4.4
Walk	11.1	46.4	36.0	6.5
Seated	7.5	50.7	37.3	4.5
Self	8.5	50.2	23.1	8.2
No-one present	40.7	24.0	20.0	15.3

APPENDIX THREE

Suggested Topics for Holiday Programmes

(adults and older children)

1. Guided Walks

Plant succession
Plant adaptations
Plant reproduction
Economic plants
Wildlife in the Botanic Gardens
Plants of the Maori
Plant families - characteristics which put plants
into particular families

2. Films and Slide Tape Shows

Films can be borrowed from the National Film
Library on a variety of subjects

3. Talks and Demonstrations

Growing indoor plants - propagation and care
Growing trees - propagation and care

The more opportunities people have to participate
themselves by making cuttings, collecting seed,
etc. the more they will benefit from the programme.

Pruning e.g. roses, ornamental trees and shrubs, fruit
trees.

Sowing lawn or laying turf

Gardens 'Open Day' - this event was recently held in
the Christchurch Botanic Gardens. Public were shown
through areas not normally open for inspection. It
was a tremendous success.

4. Exhibits

Rare and endangered plants (live specimens may require)
Relief model of the Gardens a protective case))
layout)
Plants with economic value)
Adaptations for seed dispersal
Pollination mechanisms
Reasons behind different flower shapes and colours
Soil displays - structure, texture, type
Displays of plants of a particular Genus (change
regularly)
'Plant of the Week' - also on display in local
libraries, community centres.

Younger Children1. Walks

Look at bark
Leaf shapes and colours, why leaves fall and
change colour
Bird and insect life

2. Activities

Making mobiles from natural materials
Story-time under a tree
Puppet shows.
Close your eyes and count sounds
Placing a sheet under a tree, shake the tree and
see what insects and plant debris fall down

APPENDIX FOUR

Some National Park Ideas for Children's Interpretation

Extract from Lynda Burns, 'Interpretation for Children in New Zealand Parks'

Mt Cook National Park has provided a display board for children's work and for many years has encouraged children to take away quizzes and material for colouring on the park. In summer 1981/82 a children's afternoon programme was scheduled which mainly involved walks to different areas, and various active displays: - Search and rescue, rock climbing, and some basic first aid. The report on the programme commented that, "Overall the idea of a programme catering specifically for children is a good one and well worth repeating in all future programmes."

Tongariro National Park has also gone for the 'children's hour' idea - in the early evening. This was started in summer 1979/80 and has continued with success. In summer 1981/82 the programme was extended from Whakapapa Village to Ohakune, and future programmes may be extended to 2 hours. The activities included indoor crafts, murals and puppet shows; outdoor walks, games, kite flying and sensory activities. The National Park has also had Easter and winter programmes for children on a small scale.

Egmont National Park has had a completely different approach. In summer 1980/81 the park ran a 'Special' overnight trip for children - a chance to experience campfire cooking and sleeping in tents. They also ran a full day Bushcraft Special. In 1981/82 the tent camp was repeated, plus a couple of new exploration field days and a full day 'living history' programme - the re-enactment of a battle.

Other programmes have been tried on a different scale. Abel Tasman National Park, Urewera National Park and Gisborne Reserves have all included special children's activities in their summer programmes.

The key point to note is that programmes differ from park to park, according to visitation trends and needs and the motivation and interest of the staff.



Paulownia trees . . . foxglove-like flowers.

Example of a newspaper article from Christchurch Press, November 3, 1983.

Rhododendrons and roses blooming

Throughout the last month conditions have been good for plant growth within the Botanic Gardens — increased temperatures have begun to warm the soil slightly, while regular periods of rainfall have sustained fresh growth.

Rhododendrons have flowered well particularly for the last two weeks and these will continue well into November. Rhododendron species and hybrids are grown in several sections of the gardens, but the main concentration is in the vicinity of the woodland bridge, while many of the more recent plantings are to the east of the McDougall Art Gallery.

Within the rhododendron classification, azaleas are now included and a colourful assortment of pink, orange, lemon and apricot shades are among the popular azalea "Mollis" area south of the children's play area.

BOTANIC GARDENS WALKABOUT

with Warwick Scadden, Curator

The rose garden features 254 named varieties of hybrid tea, floribunda and miniature roses. The first of the blooms have appeared and during November will provide one of the most popular attractions the Botanic Gardens has.

Annual plants for the spring bedding scheme have almost finished their display — those for the summer displays, namely antirrhinum, begonia, geranium, petunia and salvia, will be planted out during the middle of the month.

Although some magnificent trees are at their best during this month, a tree which deserves far greater

attention is the Paulownia tomentosa, commonly called the foxglove tree or emperor's tree. It is a deciduous, round-headed tree attaining a height of 12 to 15 metres and because of this is more suited for large gardens.

The principle beauty lies in the purplish-blue foxglove-like flowers which appear in late spring. Leaves are of a large rounded form often 250mm long and 200mm wide.

The tree is readily raised from seed and growth in its early years is rapid. A line of Paulownias can be viewed west of the conservatories.

AIMS

&

OBJECTIVES

EDUCATION CENTRE

ROYAL BOTANIC GARDENS SYDNEY

- 1 To provide quality of education. This objective stands above any other aim, objective or goal that is stated for the education service.
- 2 To interpret the Botanic Gardens resources from a number of theoretical standpoints and using a number of different techniques.
- 3 To make Botanic Gardens resources available to students, teachers and Educational groups.
- 4 To assist students, teachers and educational groups to interpret and utilise resources available at the Botanic Gardens.
- 5 To assist teachers to fulfil the aims and objectives of their programmes that relate to the resources of the Royal Botanic Gardens, Sydney.
- 6 Where possible to influence the appropriate teachers, educational programmers and other personnel involved in deciding content and mode of content interpretation to
 - * utilise Botany in such content
 - * teach and present botanical material in an exciting and imaginative way.
- 7 To excite students
 - * with plant material
 - * in science via biology
 - * so that they will develop a continuing interest in plants and plant studies.

- 8 To keep content as up-to-date and complete as is appropriate to the level of study and student ability.
- 9 To improve teachers' awareness of resources available at the Botanic Gardens and of the techniques available for utilising these resources with educational groups.
- 10 For the education officers at the Royal Botanic Gardens to remain in active professional contact with
 - * Teachers
 - * Other education officers
 - * Improvisors of educational technique and theory.
- 11 To develop new techniques, teaching sequences and programmes for utilising the resources of the Botanic Gardens.
- 12 Where appropriate to develop new aims and objectives for the Education Service at the Botanic Gardens.
- 13 To fulfil the educational aims of the Institution.
- 14 To assist other members of staff to fulfil their educational aims and objectives when these aims and objectives relate to
 - * the institution
 - * educational groups.

The Aims and Objectives contained within this document were produced after investigating the needs of:

1. The Royal Botanic Gardens, Sydney
2. Users of the Education Service
3. Education Officers at the Botanic Gardens

We believe that, if correctly implemented, these aims and objectives will fulfil most of the important needs of the Gardens, Users and Education Officers.

This document is purposely open-ended (e.g. aim/objective 12) to incorporate the changing needs of the Gardens, Users of the Education Service and the Education Officers. At no time during the production of this document did we assume that:

1. The document represented a complete list of aims and objectives.
2. The list would be either permanent or unchangeable.

Periodic assessment has been instigated to determine if:

1. The Education Service is adequately fulfilling its aims and objectives.
2. Aims and Objectives need to be altered/omitted/added in order to best satisfy needs.

Leonie M. Kemp

Leonie M. Kemp,
Education Officer.

J.A. Johnstone

John A. Johnstone,
Education Officer.

APPENDIX SEVEN

Interpretive publications and cost estimates (from a commercial printer).

Cost for 500
brochures:

- Paper, using
Gloss Art, \$330.00
- Plates,

950.00

Comping extra
if required.

Cost for 500
brochures:

- Paper, \$155.00
- Plates, \$85.00

Comping extra
if required.

2LACK