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Colloque international sur le thème

## Nature et Jardins botaniques au XXI<sup>e</sup> siècle

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### Education at which level — the Kew example

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#### ABSTRACT

BROMLEY, G. (1993). Education at which level — the Kew example.

Comptes-rendus du colloque "Nature et Jardins botaniques au XXI<sup>e</sup> siècle", Genève, 2-4 juin 1993.

*Boissiera* 47: 122-127.

The mission statement of the Royal Botanic Gardens, Kew states that Kew's purpose is to increase mankind's understanding of the plant Kingdom. This is central to the planning and policy development within the Education Department, and provides it with a broad remit to deliver programmes to a wide audience in as effective a manner as possible. To reach such a multi-level audience, Kew's Education Programmes take three forms:

1. Adult education programmes,
2. Schools programmes,
3. Interpretation.

In today's climate of diminishing resources, yet increasing demand for information and the need to pass on vital messages to such varied audiences, Education programmes have to be cost and time effective. Kew has recently rationalised the way it can best deliver its Education Programmes and is currently evaluating the effectiveness of its new policy. This paper will outline some of the ways Kew is meeting the demand for education and discuss the relative merits of each.

#### RÉSUMÉ

BROMLEY, G. (1993). L'éducation: à quel niveau? — L'exemple de Kew.

Comptes-rendus du colloque "Nature et Jardins botaniques au XXI<sup>e</sup> siècle", Genève, 2-4 juin 1993.

*Boissiera* 47: 122-127.

L'objectif principal poursuivi par les "Royal Botanic Gardens" de Kew est d'augmenter la connaissance humaine du monde végétal. Cet objectif est une idée centrale en matière de planification et de politique de développement au sein du Département de l'éducation, et il lui incombe d'élaborer

des programmes aussi efficaces que possible pour toucher la plus grande audience. Pour atteindre un public le plus diversifié possible, le programme d'éducation de Kew revêt trois aspects :

1. Programmes d'éducation visant les adultes,
2. Programmes scolaires,
3. Interprétation.

Dans le climat actuel de ressources toujours plus restreintes, en même temps qu'augmente la demande d'informations destinées à une audience variée, les programmes d'éducation doivent être efficaces tant sur le plan des coûts que du temps investi dans leur réalisation. Kew s'est engagé dans une rationalisation de ses méthodes de programmes d'éducation, et procède à l'heure actuelle à une évaluation de sa nouvelle politique. Cet exposé fournira des exemples utilisés par Kew pour faire face aux besoins d'éducation, et discutera de leurs mérites relatifs.

Central to the strategic planning and policy development within the Education Department at the Royal Botanic Garden's, Kew is the mission statement 'To increase public knowledge and understanding of the value and vital importance of plants and to increase recognition of, and support for, the work of R.B.G., Kew'.

There are several factors which have influenced the educational programme development at Kew over the last few years. Firstly, and perhaps most importantly, is that the new Directorate has shown a keen enthusiasm for educational development within Kew and has been supportive of new education policies and strategies. Secondly, the restructuring of what was the old 'Museums' department into a new 'Education and Marketing Department' at Kew has removed curatorial responsibilities from the education section and allowed for a more flexible and innovative use of staff time and resources. The new department was additionally given free range to produce and deliver an education programme that would most effectively meet the demands of Kew's large and varied visiting public.

The fact that Kew maintains an international reputation, has a large visiting public (ca.1 million) and is continually under public scrutiny has naturally affected the development of its educational programmes. Kew is renowned as a centre of botanical and horticultural expertise and this has led to an expectation on the part of its users that there will be broad, high quality educational provision. As in many other Botanical Gardens however, be they large or small, there is limited staff and monetary resources and the reality is that it is impossible to provide every service the user would wish for. Decisions have to be made as to which provision will ultimately deliver Kew's message most effectively and which audiences are best targeted.

Within any Botanic Garden there are many very different audiences which need to be satisfied in terms of educational provision, and each of these will require a specific approach. In general there are five types of audience to consider, although this may vary from garden to garden.

- a. The general public.
- b. Those in full time education and their teachers.
- c. Adults requesting specific training.
- d. Internal students or staff within the garden.
- e. Long distance learners.

At the Royal Botanic Gardens, Kew the first four of these groups are dealt with, and as yet there are no plans to deal with the fifth. Setting aside the training for internal students and staff, which is dealt with in a variety of ways, Kew provides specific educational programmes to meet

the demands of the first three audiences. Within each programme, the strategy is to inform the relevant audience about the subject matter and through this to support and encourage good management of the world's plant resources on which our future depends. The three programmes are:

1. Interpretation.
2. Schools Provision.
3. Adult Education Provision.

#### *Interpretation — The Kew System*

The Royal Botanic Gardens, Kew has ca. 450 hectares of landscape for visitors to see and ca. 40,000 different plant species to interpret. It also has its own message to deliver; to raise awareness about plants, their habitats, and their conservation. It is obviously impossible to interpret every plant or space with a formal labelling system; nor is it possible, with few staff, to keep up with the constant demands for instantaneous interpretation from sections in the Gardens and other science departments. A new policy has recently been agreed for a five years rolling programme on interpretation, agreed with the Gardens staff, to provide full site specific interpretation in sequence throughout the areas visited by the general public. This will allow the Education Staff to develop 'packages' of interpretation for designated areas, in the form of labels, interactive display materials, themed tours and schools material. It will also enable more flexible use of the staff within the department (totalling ten at present) who can collaborate on producing a range of cohesive and complementary materials for several audiences.

A recent development at Kew, which has done much to enhance interpretation, has been the launching of a 'Volunteer Guide' scheme. In order to explain better the work of Kew, and it's mission, a team of volunteers have been trained to provide in depth tours of Kew to both the casual visitor and booked groups. There is little doubt that this 'person to person' delivery of Kew's message has raised the awareness of the importance of plants and Botanic Gardens to the general public, as well as increasing their enjoyment on a visit to Kew. It is hoped that the service will also increase visitor numbers in the winter months, by offering themed 'out of season' tours.

Starting a Volunteer Guide scheme is not to be entered into lightly! At Kew, a two years feasibility study provided a great deal of background knowledge in what can, and cannot, be accomplished by using volunteers, and how best to approach the subject. Volunteers are selected first on paper, according to strict criteria, and are then interviewed for selection to the training programme. After completion of the training, volunteers are assessed individually on their knowledge and guiding techniques. If passed, trainees are given a 6 month probationary period, with periodic assessments, before being accepted as a full Kew Guide.

This may seem an elaborate procedure, but has resulted in a well trained, manageable team of enthusiastic guides who have confidence in themselves and who have also won the complete acceptance of permanent staff at Kew. It has also raised the number of persons available for 'interpretation work' by 35, and has provided direct communication to over 5000 visitors. This figure is for the first year only, when 19 guides were on site. This 'spreading of the message' in a very direct form is obviously proving very effective and additionally appears to disseminate the information much more widely than to the original recipients.

Not all visitors however like to be 'guided'. At Kew, a new series of timed and themed 'trail' leaflets is in production to raise visitor awareness about the work of Kew and, at the same time, provide enjoyable and stimulating resources for single and repeat visitors. These can be produced in either a simple or more elaborate form, depending on the gardens resources, but again reach

a broad audience effectively, and can also be targeted for different age groups. At Kew we are addressing the adult general visitor currently, but may consider bringing in different types of trail later.

Other interpretation at Kew includes:

1. Site specific labelling; this relates directly to plants of major importance, major habitat displays, and plants or resources directly connected with Kew's major research thrusts.
2. Exhibitions; again directly concerned with major research interests at Kew, conferences in progress or project work being undertaken by Kew.
3. Printed materials; these serve a dual purpose as background information for the general public and back-up resource material for educational study-groups.

#### *Case Study in Schools Programme: Plants across the curriculum*

Until a few years ago, Schools Programmes at Kew were reactive, often given in isolation and did not address the needs of schools today. Over 60,000 children visit Kew on school trips every year and it soon became obvious that it was impossible to provide individual training for all groups. Kew Education Staff were also disappointed in the narrow way in which Botanic Gardens were seen as a resource for teaching. A change in approach and policy was clearly needed and this was developed and put into operation as soon as possible.

Schools programmes at Kew are aimed primarily at teachers; this is both time effective and more efficient in the dissemination of information over a wider area. Currently one of the major strategies of the teacher training programme is to inspire teachers to use plants as the focus for every aspect of curriculum work. Traditionally schools have used Botanic Gardens for specific programmes such as science, developing topics to explain 'Variation in the plant kingdom', 'Life Processes' and 'Adaptation to Environment' etc. Botanic Garden resources serve these programmes well and offer scope for the introduction of environmental education.

Teachers in Britain, as presumably elsewhere, are now however under increasing pressure to deliver value for money in the use of outside resources and so need extra incentives to bring schoolchildren to Botanic Gardens or similar sites. If teachers can be shown that they can use plants to deliver curriculum work in all subject areas, and that the training for this can only be effectively delivered by using the resources of Botanic Gardens, it increases potential use by schools and similarly increases the audience for the delivery of Botanic Garden messages.

In order to attract a broad-based teacher group, Kew uses the most direct link between the subject matter on view and the student i.e. 'Economic Botany'. Kew is occasionally criticised for using 'economic values' to raise awareness about the plant kingdom, however the topics are never dealt with in isolation and much time and effort is put into linking economic botany with the issues of maintaining plant biodiversity, plant habitats and the need to create long term conservation strategies. In fact, the focus provides an excellent forum for discussion on what are major problems facing the world today.

Once students understand that plants are used in all aspects of life; as food, textiles, building materials, flavours, religious symbols, industrial oils, transport and medicines it becomes easier to explain the need for classification and investigation into the properties of plants. Matching plant topics to areas of the curriculum becomes simple for teachers so that History, Geography, Religious Education, Technology and Music can all be covered using, for example, cotton, spices, plant based

religious artifacts, furniture and musical instrument production. Kew also runs booked activity days for school groups, on a first come — first served basis. Examples of interesting programmes run recently at Kew are:

*‘Wrapping’*

This linked objects to raw materials and examined techniques for ‘wrapping’ within other cultures. The themes for teachers were technology, art and design and geography, but the overlying objective was to encourage an informed interest in other cultures and to raise awareness of the contrasting opportunities and constraints facing people in different places.

*‘Body painting’*

This course linked mathematics, art and design and geographical studies. In this instance children were invited to a lecture on the Amazon Basin with specific focus on the way that indigenous groups utilised plants. The influence of plants in art and design and mathematical patterns in plants provided the children with ideas for body painting designs. These were transferred into reality by the children painting their own plant based designs onto themselves or each other.

*‘What’s that plant’*

An investigation into plant form and function and the development of taxonomic skills in children. Explanation of the vital need for the foundation science of ‘classification’ and provision of exercises that can be used in the teaching of mathematics. The sorting of monocotyledons and dicotyledons by eight year olds has since become a fun exercise and may help to provide the taxonomists of the future!

*Case Study in Adult Education: Plant Conservation Techniques*

Kew has excellent resources and highly skilled staff that can provide examples of a range of techniques and first hand examples of various botanical, horticultural and conservation practices. There has also been an increasing demand for specific adult training that can only be matched by the resources of a botanic garden. To meet this demand and also extend the audience for ‘Kew related’ messages, Adult Education was launched as a self-funding programme within the Royal Botanic Gardens, Kew two years ago.

It originated with such courses as Garden Design, Botanical Photography and Botanical Illustration to provide baseline funding for the operation, as it was seen that this programme could only be delivered if it was completely self financing. In 1993 the latest development will be offered, a course in ‘Plant Conservation Techniques’. This will be a five week course teaching the basic skills and expertise required for the management of ex situ and in situ plant conservation worldwide. It will enable staff from reserves, Botanic Gardens and similar institutes to see their particular needs in a broader, international context and consequently develop programmes which fit more closely within a global strategy for the conservation of biodiversity and sustainable environmental management.

*Summary*

It will be obvious to all that the provision of education programmes within any Botanic Garden will be dependent on staff time and resources. There also needs to be strong support and commitment from the Directorate and staff other than just those working in education. Individual gardens will have to judge whether they wish to deal with one or several audiences, and will have to assess their resources; staff, collections, specific expertise, access, space and finances.

My advice is:

- a. keep your messages simple,
- b. beg, borrow and steal resources and advice from other areas — there is no point in reinventing the wheel!
- c. if you see other good ideas, copy them (and credit the developer),
- d. find ways of covering the cost of resources if you have no other income eg sell trails or schools materials, etc.,
- e. use volunteers if possible, but only under strict terms and conditions,
- f. never make promises you can't deliver!

Kew has a large educational programme by many other peoples standards, but it has been developed with a lot of careful strategic planning and phased in over the last eight years. The overall aim of the Education Section at Kew remains simply to reach as many people as possible with the understanding that:

Plants are central to my existence,

Conservation measures are vital for the maintenance of plants and biodiversity.

I should support the sustained management of the earth's resources and those that work towards that goal.

When we achieve that with all those who use the Gardens for education we shall certainly be moving in the right direction.