

carry out their own field trials to compare fertilizers, varieties, degrees of shade, types of soil, pesticides, etc. Leaf lengths and number of leaves are easy to measure. Some preliminary advice may be needed on the design of the trial and on the statistical analysis of the data, but trials in the grower's own field can give directly applicable results.

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*Principes*, 35(3), 1991, pp. 164-166

## The Botanical Gardens of the University of the South Pacific

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In September, 1988, the President of Fiji, Ratu Sir Penaia Ganilau, officially opened the Botanical Gardens at the University of the South Pacific in Suva, Fiji.

Some two years previously, a small group of people mainly from the University started to meet regularly to see what could be done to upgrade the gardens on the University campus. The Chairman was Dr. John Miller, an American botanist with the Department of Biology, School of Pure and Applied Sciences. The writer was the only non-university member. In the beginning, not a lot of progress was made although some improvement in the University gardens could be seen. Attempts were also made to get the students to take pride in their campus and to realize that, when they needed leaves and flowers for cultural or social occasions, they should not simply strip the closest trees and gardens. Stu-

dents at the University come from the island nations of the South Pacific from the Cook Islands to the Solomon Islands, from Tonga to Kiribati.

The situation changed somewhat with the arrival of Ian Banner as the Director of Buildings and Grounds. He had previously been in Papua New Guinea and was enthusiastic about the appearance of the grounds. At about the same time, I realized that I would have to find a permanent home for many of my palms, cycads and hibiscus—most of these were reaching the stage when they could not stay in containers any longer. My garden was also overfull and I needed more space for the younger and smaller plants in my collection.

A small valley near the entrance to the University was chosen as an area where we could start. It had been used for many

years by people living outside the University (and in no way connected to it) for food gardens but many of these had been abandoned or only partly used. In its existing state the valley contributed nothing to the appearance of the grounds. Taro (*Colocasia esculenta*) and Cassava (*Manihot esculenta*) had been the main food plants grown. Following the general clearing of the valley, Ian was able to find funds to build several bridges across the stream (drain) and to build a number of weirs to provide small bodies of water and to control silting. Even this small change made a dramatic difference to the appearance of the valley and staff and students began to use the area.

In my enthusiasm, I was probably not systematic in my planting and I have no doubt that a better arrangement could have been devised. I have more palms to add—probably another one hundred plants in thirty to forty species—and, I hope, these can be sited with a little more thought.

Just prior to the official opening of the Gardens, John Miller returned to America and, after a period of some months, his place was taken by Dr. David Greenwood, from Australia. Unfortunately, David has also left Fiji. However, during his time he continued the work of Chairman of our committee, with considerable ability and enthusiasm.

There is a well established Herbarium in Fiji, for many years a part of the Department of Agriculture. In 1982, the Herbarium was transferred to the University and occupied a building on the Lower Campus near the sea. Recently, it was moved to a renovated building within the immediate area of the Botanical Gardens. Both John Miller and David Greenwood did a lot of work in renovating and upgrading the specimens. Over the coming years it is hoped to make this the Herbarium for the whole South Pacific area.

As the first valley in the Gardens gradually filled, an adjacent valley has been cleared and an access road to the nursery upgraded. To date, the major action in this

valley has been the building of a rather large pond, with water lilies, by damming the drainage stream. This, technically, is for use by the School of Natural Resources but, by siting it in the extension of the Gardens, it also adds to the beauty of the University grounds.

On lawns around the pond, I have planted about thirty cycads and it is likely that I shall move some of the cycads originally planted in the first valley to this valley. Further up the valley we shall be planting a wide range of local fruit and food trees.

Other plans include the planting of medicinal plants and the building up of collections of important cultural plants from all the islands of the University region—certain plants are important when particular ceremonies are held.

Funding for the development to date has come from within the University. It was particularly pleasing that in 1988 when funds were very limited, a committee made up of mainly Pacific Island members of staff insisted that the Botanical Gardens project was worthy of support. However, for any further expansion of the Gardens, it is likely that we shall have to look elsewhere for funding. I estimate that development has so far cost about \$F 50,000 plus my own and other donations of plants.

Two other members of the committee deserve mention. Dr. Bill Aalbersberg, an American who may make Fiji his home, has acted as Chairman on occasions and has been an active member. Mrs. Leba Savu, the Laboratory Manager of S.P.A.S., is technically our secretary but her involvement goes much further. Her deep interest in local plants and commitment to the Botanical Gardens project have been extremely valuable. Up to the present, much of the drive to develop the Gardens has come from Europeans—both short and long term residents of Fiji—but for the Gardens to develop further, local Pacific people must play an increasingly positive role. Leba is such a person and sufficiently senior in both the University and Fijian

hierarchy to make her voice heard. It is hoped that in the coming years, the committee will have more members of her ability and interest.

Lists of palms, already planted in the Gardens and to be planted at a later date, are attached.

### Palms Already Planted in the U.S.P. Botanical Gardens

*Acrocomia* sp.  
*Aiphanes caryotifolia*  
*A. erosa*  
*Alsmithia longipes*  
*Archontophoenix alexandrae*  
*A. cunninghamiana*  
*Areca triandra*  
*A. vestitaria*  
*Arenga engleri* (?)  
*Balaka longirostris*  
*B. seemannii*  
*Bentinckia nicobarica*  
*Bismarckia nobilis*  
*Calamus vitiensis*  
*Carpentaria acuminata*  
*Caryota mitis*  
*C. urens*  
*Chamaedorea elegans*  
*Chrysalidocarpus cabadae*  
*C. madagascariensis*  
var. *lucubensis*  
*Cocos nucifera*  
*Cryosophila albida*  
*Cyrtostachys renda*  
*Dictyosperma album*  
*Drymophloeus oliviformis*  
*Elaeis guineensis*  
*Gulubia costata*  
*Licuala grandis*  
*Livistona australis*  
*L. chinensis*  
*L. rotundifolia*  
*L. saribus*  
*Metroxylon vitiense*  
*M. sp.*  
*Neoveitchia storckii*  
*Normanbya normanbyi*  
*Pelagodoxa henryana*  
*Phoenix reclinata*  
*Pritchardia pacifica*  
*P. thurstonii*  
*Raphia* sp.  
*Reinhardtia latisepta*  
*Rhapis excelsa*  
*Rhopaloblaste* sp. (*singaporensis*?)  
*Roystonea oleracea*  
*Sabal minor*  
*S. palmetto*

*Satakentia liukiuensis*  
*Syagrus* sp.  
*Veitchia pedionoma*  
*Washingtonia filifera*

### Palms Yet to be Planted

*Areca catechu*  
*Arenga undulatifolia*  
*Balaka microcarpa*  
*Butia capitata*  
*Carpoxylon macrospermum*  
Various *chamaedorea* species and hybrids  
*Chrysalidocarpus lutescens*  
*Clinostigma exorrhizum*  
*Coccothrinax miriguama* (?)  
*Copernicia prunifera*  
*Corypha utan*  
*Deckenia nobilis*  
*Drymophloeus beguinii*  
*Geonoma* sp.  
*Gronophyllum pinangoides*  
*Heterospathe elata*  
*Hyophorbe lagenicaulis*  
*H. verschaffeltii*  
*Johannesteismannia altifrons*  
*Latania lontaroides*  
*Licuala paludosa*  
*L. sp.*  
*Linospadix monostachya*  
*Livistona decipiens*  
*L. mariae*  
*Marojejya darianii*  
*Nephrosperma vanhoutteanum*  
*Phoenicophorium borsigianum*  
*Phoenix canariensis*  
*P. dactylifera*  
*P. roebelenii* (possibly hybrid)  
*Physokentia rosea*  
*Pigafetta filaris*  
*Pinanga coronata*  
*Ptychosperma ambiguum*  
*P. furcatum*  
*Rhapis* sp. (miniature form)  
*Roscheria melanochaetes*  
*Roystonea regia*  
*Sommieria affinis*  
*Syagrus romanzoffiana*  
*Synechanthus* sp.  
*Thrinax floridana*  
*T. sp.*  
*Verschaffeltia splendida*  
*Veitchia joannis*  
*V. merrillii*  
*V. petiolata*  
*V. sessilifolia*  
*V. simulans*  
*V. vitiensis*  
*V. sp.*  
*Zombia antillarum*