

Chamaerops



47

Contents

Articles:

Rain, Rain, and more of the same! <i>by John Kenahan, Goring, UK</i>	page 5
Kannonchiku <i>by Keith Andrew</i>	page 8
The Royal Botanic Garden, Edinburgh <i>by Tony King, Romford, Essex, UK</i>	page 12
On the identity of Musa sp. 'Yunnan' <i>by D R Constantine, Bridgwater, Somerset, UK</i>	page 16
Subtropical Lake District <i>by Jim Reynolds, Vancouver, B. C., Canada</i>	page 20
A Glance Through Time	page 22

Standards:

Editorial <i>by Tobias W. Spanner</i>	page 3
Shop <i>get back issues and more</i>	page 23

*Cover: Looks like a postcard: Old and stately Trachycarpus fortunei at the lakefront in Lugano, Lago di Lugano.
Photo: Gerard Pury*

Chamaerops is the quarterly journal of The European Palm Society. The European Palm Society (EPS) is affiliated to the International Palm Society and was founded in 1991. The EPS is a nonprofit organization dedicated to sharing information about palms and other exotic plants across the continent of Europe. The main goal of the EPS is to communicate with other enthusiasts through Chamaerops, the EPS website, or personally at Society meetings, in order to share ideas and knowledge of the successful cultivation of exotic plants. Above all, the EPS and Chamaerops are run by members, for members.

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Editorial

With spring well underway and the new gardening season already going at full steam, people are busy planting and replanting everywhere. The standard greenery most frequently available and used in gardens still accounts for most of the plantings of course, but you can see more and more palms and other exotics appearing everywhere, even in seemingly unsuitable areas deemed too frosty even by enthusiasts' standards. Just 10 years ago, garden centres all over northern Europe would not have been caught dead stocking palms for outdoor use, and even in the mild south of Europe the range was limited mainly to the local favourites *Phoenix canariensis* and *Washingtonia robusta*, and the odd *Kentia* or "Areca"-Palm, imported from Holland, incredibly enough.

Today, there is a wide range of cold hardy palms available not only from a growing number of specialist nurseries all over Europe, but also from the mainstream suppliers, who have discovered a viable business addition. It is no longer a surprise to find a *Trachy* or a *Chamaerops* in your local garden store in the north, and nurseries in Italy, France and Spain now grow and stock an increasing range of mouth-watering palms, including *Brahea*, *Butia*, *Syagrus*, *Triethrinax* and even an odd *Jubaea*.

Surprisingly, despite this growing interest in exotic plants and, more specifically, palms, membership numbers in the European Palm Society remain at a fairly constant level of 600 members plus a couple of hundred subscribers to the EPS website. Other palm societies, including the largest and most prestigious of them all, the International Palm Society, have actually seen a decrease in membership in recent years, even though interest in palms is constantly rising.

I would claim that the European Palm Society was and still is heavily responsible for this new exotic boom and is one of the forerunners in

Europe of this new trend. *Chamaerops*, accordingly, is arguably one of the best sources of information for news in the palm world. So why is it, I ask myself, that our membership numbers do not profit from this growing interest? Perhaps part of the problem is that information can easily be accessed free from the Internet, causing many to think that spending £15/EUR23 a year in membership fees is an unnecessary expense. How can we involve those who get most of their information from free online sources in the EPS? Perhaps another problem is that, with palms so widely available at every local garden centre, people who buy a palm there today are not aware of the EPS and the wealth of information it could provide to them to help grow their new acquisition successfully. How can we get more garden centres and local nurseries to recognize that promoting the EPS to their customers will help further their sales of palms and other exotics with a minimum of additional effort? Every specialized palm nursery can probably tell numerous tales about people who call asking all sorts of questions about "a palm" they just purchased at one of these generic garden centres that came with no additional information-frequently even without a name.

I would claim that *Chamaerops* and the EPS website with its large archive deserve much more attention among new palm enthusiasts as a reliable source of firsthand information, and I hope that every member will promote it as such to friends and others interested in growing palms. Word of mouth is, after all, the best advertisement.

I hope many of you will be prompted to share your ideas on how to promote the EPS. Our Letters Page and the EPS forum on the web are yearning for your contributions.

T.S.



Rain, Rain, and more of the same!

By John Kenahan, Goring, UK

Those were the circumstances that faced those of us living in the British Isles in the winter and spring of 2000/2001 and which produced the highest rainfall since records began over 300 years ago. Inevitably such conditions caused great damage and many people were forced to abandon their homes to the rising flood waters.

In this article I shall concentrate on the horticultural implications of the Deluge . . . and how it affected the garden of yours truly. This fairly small garden, which measures around 100 ft. by 50 ft., is situated on the West Sussex plain, an area that runs (roughly) from Shoreham in the east to Chichester in the west and lies south of the South Downs, a pleasant area of Downland, which I should explain for non-British readers actually means upland! "Downland", or the shorter form "Downs", when spelt with a capital "D" refers to chalk upland in southern England for they are a series of hills.

On purchasing the property in 1993, I soon removed most of the existing garden contents, which included a small vegetable patch, an even smaller "herbaceous border", and some out-of-control conifers, and gradually began planting my kind of plants, which include Rhododendrons, various "exotics", succulents and especially - wait for it - those most wonderful and essential jewels in the crown of any exotic garden - PALMS! The effect of the Great Deluge on the palms and other exotics in the garden was very interesting and

informative, for in addition to the constant rain, there was also flooding over most of the garden for two days due to a drainage ditch bursting its banks because a nearby culvert had become blocked with debris, mainly consisting of twigs and leaves, but fortunately the flood water was neither contaminated by sea-water or even dirty water, which happened less than a mile away.

Just to make things even more interesting (!) I should explain that the soil is clay and being close to the foreshore the water table is quite high, being only a few feet below the soil surface, but variable, as is the case with all low lying regions, depending on the height of the tide, wind velocity and direction, and of course rainfall. It would not be necessary to dig very deep to make a well, which may indeed be necessary at some time in the near future, for all the climate change models predict much hotter and drier summers for those of us in southern England, and guess who lives close to the beach and in the front line of all this climate change? Yep!

The effects of the flooding in November 2000 (which covered about 70% of the garden) were not at once apparent, but shortly afterwards, in late December, *Acacia dealbata*, which had its root area completely submerged, dropped every single flower bud, and an *Acacia baileyana* "Purpurea" on slightly higher ground that had its root area 50% submerged lost 50% of the buds. I doubt if that was coincidence. I am delighted to report that there was no foliage damage to either and both are now growing and flowering well. Succulents including *Agave americana*, *Dasylyrion acrotrichum*, *Puya alpestris*, *Fasicularia bicolour* and a *Protea grandiceps* were in the lower of my two raised beds and surrounded by water but were

Native to vast plains like this one in Corrientes, Argentina, which occasionally experiences flooding, Butia yatay is always found on well drained and well aerated, sandy soils.

Photo: Martin Gibbons and Tobias W. Spanner.



completely unaffected even though the lower roots of most of these would have been below water! I am very pleased with these raised beds, which are of my own design, totally radical and very different from the usual such structures. I hope to write about them in a future article.

There was no damage whatsoever to the two *Olea europa* or even the shallow rooted *Rhododendrons*, although the normally prolific, sweet scented *R. loderii* "King George" dropped all its flower buds but one.

Having kept you in suspense for long enough I shall now tell you about the palms! Those above the standing water, which include *Trachycarpus fortunei* (planted in 1993), *Chamaerops humilis* (1993) *Butia capitata* (1994), *Brahea armata* (1994), and *B.edulis* (1997), were fine though the ground was extremely wet with all that rain and I was particularly pleased that the *Braheas* managed to tolerate those conditions, which they surely could not have done if they had been newly planted.

In the flooded area two specimens of *Phoenix canariensis* (1995 and 1997) were undamaged, although one produced three inflorescences the following June whilst still very juvenile and only two metres tall. In contrast, a *Butia capitata* (1996) which had flowered the previous two years did not produce a single inflorescence but the foliage was fine and the strong growth (yes - *Butias* can be fast!) continues and this year it flowered as normal. A specimen of *Acoelorrhapha wrightii* (1999), which lost its five foot main trunk in the winter of 1999 (frost damage), was not worried by the rain and the four or five small suckers are growing on well, and I reckon this interesting palm is surely worth a try in very mild areas such as central London, though a neutral or low pH, (acid) soil is crucial.

Despite these extreme, severe, and unexpected conditions, only one palm-a newly planted *Butia*

yatay (August 2000)-died: suddenly in April 2001 due to flooding. Yes, just a single casualty! I can assure you that I never anticipated flooding (it had not happened in the fifty years since the house was built) but I had expected heavy winter rain, and hotter summers due to global warming and therefore my planting is done gradually, rather than being rushed, and is still continuing. Apart from the *Butia yatay*, all the other plants were well established and had the extensive root systems to cope without too much stress; if the flood had continued for longer, however, it could have been a very different outcome.

What are the lessons for palm and exotic plant lovers? If, perhaps, you are new to this wonderful palmy way of life and full of enthusiasm to rush out into the back yard and plant everything all at once then my advice for those with a temperate or continental climate is DON'T! Instead, plant gradually over three or four years or more, and should a calamity occur, such as a surprise hard frost or even record high temperatures and drought, then all your more established palms and exotica will have a good chance of survival and you won't be facing total wipeout in year one. Newly planted palms and exotics will be badly stressed by all such extreme events. So, my palm friends, don't put all your eggs into one basket; just prepare your ground carefully, relax, take your time . . . and be happy.



*Zuikonishiki. Article see page 8.
Photo: Keith Andrew*

Kannonchiku

*Keith Andrew - National Rhapis Collection,
Holyhead, Isle of Anglesey, U.K.,
www.kannonchiku.co.uk*

I have always been interested in things oriental, such as Japanese Prints, Bonsai, Japanese Gardens, Satsuma Ceramics and Koi, to name a few. Now a new passion - Kannonchiku - *Rhapis excelsa* named cultivars.

A professional artist and printmaker, I first came across *Rhapis excelsa* while selling my prints in Tokyo and Osaka, but had no time to pursue the matter. When I returned to the U.K. I thought I would look into getting some, only to find that they were not available in the U.K. and hardly any one had even heard of them. Then my wife found an out-of-print book, *The Miniature Palms of Japan*, published in 1981, and I became even more fascinated by these elusive palms. This was back in 1997. Eventually I found some in the U.S.A. More recently, I have bought some from a collector reducing his collection that included some quite mature specimens. This prompted me to produce the web site. My intention was to build my collection and sell the surplus offshoots to fellow enthusiasts and collectors. Now I have been appointed the European Kannonchiku representative and have Japanese stock available for sale.

Kannonchiku are a naturally dwarf form of *Rhapis excelsa* palm that rarely reach two metres. They have stems covered in fibrous bark and fan-shaped leaves. Subtle variations of leaf shape, colour, texture, and variegation of leaf, make this a truly unique palm.

There are over one hundred named cultivars of Kannonchiku. From 1947 they have been registered by the Japan Kansochiku Association (Kansokai) who standardized the list of varieties.

The varieties can be divided into four groups dependent on place of origin.

1 - The Native group - early introductions since the seventeenth century.

2 - Rakanchiku - originate from Southern China.

3 - Taiwanchiku - Came to Japan from Taiwan in great numbers around 1937.

4 - Imported Group - Imported from places other than Southern China and Taiwan with characteristics dependent on place of origin.

These slow growing, long-lived palms have been part of Japanese culture since their arrival in Japan around 1600 and enjoy cult status, but are virtually unknown in the West.

Kannonchiku are propagated by removing the suckers. Only two or three are produced each year, making the production of a large number of plants a slow process.

New varieties come from seed but only 1 in 10,000 seedlings will produce a worthy new cultivar that might warrant registration.

Every year in Japan, members of the Japan Kansokai Association meet to compile a directory of palms based on beauty, price, popularity, and that year's new introductions. The members rank the palms into four classes (Grade 1, 2, 3 and 4). Within each class, the most popular palms are given special recognition. Today the highest ranking palm is Kobanoshima with the best specimens selling for many thousands of dollars. In the early seventies the No 1 ranked palm was Eizannishiki, and in 1975 a single choice shoot sold for nearly \$10,000. So, collecting Kannonchiku can be a very profitable hobby. This ranking status will greatly affect the price of the palm. Palms in a lower ranking group can also be worth as much as the No 1 types due to rareness.

Cultivation

Rhapis palms are very easy to cultivate; but, to grow perfect specimens with no blemishes is a bit more difficult, so certain criteria have to be met

Temperature:

Although a subtropical palm, *Rhapis excelsa* adapt very well to many environments as long as time is allowed for gradual acclimatization.

The optimum growing temperature range is 20°C (68°F) - 23°C (73°F), which, along with their ability to tolerate dry indoor conditions, makes them ideal house plants.

During the winter it is probably best to keep the palms on the cool side for a time as this will harden them. Too high a temperature in the winter could weaken the palms and produce leggy growth. 10C (50F°) - 15°C (60°F) seems about right and the palms will continue to grow slowly. The palms will stop growing below 10°C (50°F) and will survive even down to freezing if protected from frost.

Light

One reason *Rhapis* palms make ideal house plants is their liking for low light interiors. *Rhapis* palms will survive in very low light but if they are to grow well they do need some filtered sunlight to thrive and produce new offshoots.

When you first get the palm, you need to know what conditions it has been used to so that you can gradually get the palm used to its new surroundings.

If the palm is grown in quite bright light the green leaves might have a yellowish appearance that can be compensated for by giving extra fertilizer, being careful not to over do it. Great care must be taken with delicate striped leaves as they can easily be scorched by strong sunlight.

Watering

More house plants have probably been killed from over watering than for any other reason. *Rhapis* palms like to be moist but not wet and soggy. An indication of when to water is when the

surface of the compost is somewhat dry.

Also, get used to the weight of the pot before you water.

A plastic pot would require less watering than a clay pot and a clay pot less watering than a Kannonchiku pot . The Kannonchiku pot is very porous with a large drainage hole, so the pot dries out more quickly and can be watered more frequently, giving more oxygen and moisture to the palm.

A good method of watering would be by immersion in a bucket. Immerse the pot twice and drain off. This will also have the effect of leaching out any deposits of salts from fertilizing. Do not let the pot stand in water as this could cause the roots to rot. If using a plastic or clay pot stand it on dry, coarse gravel to help air circulation under the pot. This is not necessary with a Kannonchiku pot as it has three feet to stand on.

Fertilizing

As *Rhapis* palms grow so slowly they require very little fertilizer, but to look their best and produce new offshoots, they do need to be fed sparingly. Also, different cultivars require different amounts of fertilizer, so if you are not sure, stay on the cautious side . As a rule, when feeding liquid fertilizer, use half the amount stated for green cultivars and one quarter the amount for variegated cultivars.

Another method of fertilizing that can be used in conjunction with or instead of liquid feed is 'place' fertilizer. The Japanese term is *Okihi*, and it is a slow release organic fertilizer. It is made by mixing cottonseed meal as the base (60%), with powdered fish (20%), and powdered bone (20%). To this mixture add a little water, mix again, and leave to ferment in a sealed container for two to three weeks.

After fermentation, form the paste into 1-2 cm balls and leave to dry until hard. One or two of these can be placed around the soil surface in the pot so that, when the palm is watered, a little of the fertilizer is washed into the pot.

There is room for experimenting with different mixtures, but be careful with delicate variegated palms, as, if too much fertilizer is washed into the



soil, the roots can be scorched. As a way of making the balls of fertilizer harder so that less is washed into the soil, I added two egg yolks to the fermented mixture!

Soil

Rhapis palms prefer well-drained soil with a ph of around six; a soil suitable for 'African Violets' is fine. Or use four parts ericaceous peat based compost, two parts perlite, one part vermiculite, two parts coarse grit with plenty of bean size gravel for drainage.

The Japanese method is to use three grades of sand/gravel: large (bean size), medium (pea size) and small (rice size). This results in an extremely free draining mixture that requires very frequent watering. Depending on where you live, this could be the ideal soil for achieving the palm's full potential. If your climate is not too hot and you have good water, this could be the best method.

Pests and diseases

Rhapis excelsa grown in the United Kingdom and given the correct cultural conditions are affected by very few pests and diseases.

However, since prevention is better than cure, regular monthly spraying with pesticide and fungicide will go a long way to prevent any attack.

Scale insect is something to look out for especially when new leaves are emerging. Look for any woolly deposits in the leaf joints. If you find a scale insect, pick it off and spray immediately.

Brown spot is a fungal disease and can affect especially the older leaves, causing brown spots and blemishes, and could be caused by cold and damp conditions. Any infected leaves should be removed to avoid the infection spreading to other palms.

Another problem, though not a disease, are rotting roots, caused by bad cultural practice such as over watering and fertilizing. The leaf tips will turn black or reddish brown. The palm should be removed from the pot and the roots checked. Any

blackened roots should be removed, the roots should be washed in fungicide, and the plant should be reotted.

The leaves of delicate variegated palms can be damaged by too strong sunlight, and scorched by drips of water left on the leaves in the sun. Keep well shaded.

Kannonchiku pots

It is not surprising that these unique palms are grown in very unique and exquisite pots.

They were designed specifically for Kannonchiku to reach their full potential. The very best are handmade works of art, known as 'Nishiki style'.

Less expensive but still impressive is the Namanishiki style, which features a 'wave and bird pattern'.

Another beautiful pot is the Fuchikin style, plain and simple with gold feet and rim against a matte black body. The black porous glaze helps retain warmth in the winter and allows roots to breathe.

Kannonchiku pots are deeper than normal pots to give the roots free reign, and the bottom is a rounded shape so as not to restrict drainage. The large drainage hole is covered with a ceramic disc known as 'sana', which stops the potting medium from falling through.

Of course, there are cheaper, machine made pots available for everyday use. Only the finest examples of Kannonchiku should be put into the high quality pots.

I hope this has wet your appetite for learning more about Kannonchiku, or even starting a collection! They certainly give me a lot of pleasure. I continue to be amazed at how the Japanese continue to develop new and ever more stunning varieties considering how slow this process is.



Taiheinishiki.

Photo: Keith Andrew

The Royal Botanic Garden, Edinburgh

By Tony King, Romford, Essex, U.K.

Many readers will be familiar with the Royal Botanic Garden at Kew but may be less aware of one of its 'sister' gardens located in the Scottish capital of Edinburgh.

During late 2002, work commitments occasionally required me to spend time working in this wonderful city, though opportunities to visit the garden were very limited! This was not helped by the fact that garden staff physically usher everyone from the grounds at closing time, 5.00 p.m. The restricted time meant that I was not really able to explore much of the outdoor plantings, notable for being rich in unusual plants from China.

For me, being more familiar with gardens in the warmer and drier South, it was great to see thriving examples of species that prefer the cooler and wetter environment of Scotland. These are plants that you just don't encounter when visiting gardens in the South East of England, or if you do, they are much smaller in growth than their Scottish cousins.

With so little time I concentrated my visits on the wonderful complex of greenhouses, collectively known as the 'Glasshouse Experience'. The main building range makes an imposing architectural statement as the supports that keep it aloft are held on the outside of the structure, rather like having your skeleton on view. The benefit of doing so is to allow maximum space within for growing plants, even incorporating a viewing gallery in the main 'temperate' section.

The main houses were constructed in 1965,

replacing an earlier range from the 1890s, and follow the modern approach of landscaped sections devoted to differing climatic conditions from tropical through temperate to xerophytic. They serve also to connect a small number of older outlying glasshouses, which include an historic palm house, constructed in 1834. As with the outdoor plantings, I was very struck by the number of plants being grown that I had never seen before, many of them original introductions from collectors made earlier last century. Other unique features are collections of species in which the garden specialises, such as those hailing from the cooler, high altitude areas of the tropics. Prominent amongst these are epiphytic species of *Rhododendron* from the Far East and New Guinea and plants of the ginger family.

Rather than give a guided tour (there is much to see!), I will pick out some highlights, starting in the largest area, devoted to plants from the temperate world.

This area is fairly densely planted and again whilst some plants are familiar, many were new to me. Amongst the notable specimens are a giant Himalayan *Magnolia hodgsonii* bearing large leaves and planted in 1939. It must be stunning when in bloom. Another wonderful tree is hailed from a genus I had previously never encountered, *Manglietia hookeri*, planted in 1927 and grown from seed collected in SW China by the great plant hunter George Forrest. Also from a Forrest collection, bearing his field number 18784, is the Chinese Olive, *Olea tsoongii*, again from SW China. Many people familiar with the majestic Oak may be less aware that this family of trees has many species that occur at higher altitude areas of the tropics. One such species that has reached

tree size proportions within this house is *Quercus glauca* with a wide distribution across China, Taiwan, and Japan.

Moving continents, two wonderful specimens represent the flora of New Zealand. A Kauri pine, *Agathis australis*, now pushes at the roof of the conservatory. Normally regarded as a slow growing species, this example was planted by the late HM Princess Margaret in 1967 when it stood 13 ft. (almost 4 m). tall. The other plant, also at roof height, is a member of the Protea family, *Knightia excelsa*.

A final highlight in this section is a *Fuchsia arborescens*, planted in 1946 and now a beautiful barked tree over 12 ft. (3.6 m) tall. It was loaded with hanging bunches of purple berries at the time of my visit.

Leaving this area via a connecting glasshouse that is home to the giant *Victoria* waterlily during the summer, you arrive at a very special section, the 'fernery'. Not just any fernery though, a home to the largest collection of Tree fern species I think I have ever seen! To add to the primeval atmosphere these plants create, the concrete floor carries imprints of tree fern fronds and also footprints of passing dinosaurs that may still lurk amongst the shadows!

The tree fern species you would expect to see are here, such as *Dicksonia squarrosa*, *D. fibrosa* and *D. antarctica*, and in some cases a number have been planted to form small groves. Other more unusual species that caught my attention included a grove of many *Cyathea malzinei* from Mexico, a *Dicksonia lanata*, and a stunning, large *Cyathea brownii* with a very woolly top to its trunk. Having an equally woolly trunk was a *Cibotium chamissoi*, a species with a more delicate appearance and a dwarfer nature than many of the giants that grow here.

Amongst the tree ferns are a mixture of equally impressive plants. Ferns such as *Todea barbara* from Australia and large *Blechnum gibbum*, themselves like miniature tree ferns. Anybody

familiar with the giant tropical fern *Angiopteris evecta* would be interested to see its slightly smaller and more cool tolerant cousin *A. lygodifolia* from China and Japan.

Besides ferns, there is a large and healthy specimen of the fern-like cycad, *Stangeria eriopus*, and a clump of the giant horsetail from South America, *Equisetum myriochaetum*. Very striking are two plants of a primitive conifer from New Caledonia, *Acropyle pancheri*, resembling a dawn redwood or *Araucaria*. They have stunning silver foliage and may even have been male and female specimens.

Being a real lover of tree ferns, this is perhaps my favourite area in which to spend some time.

Moving on again through interconnecting houses, you leave behind the coolness of the fernery on a walk via hot, humid sections full of cycads, palms, orchids and other tropical species. A curiosity here is the climbing plant *Dioscorea bulbifera*. A member of the yam family, this one produces tubers along its climbing growths and not surprisingly is known as the 'air potato'!

Arriving in the old palm house you are again back in a more temperate atmosphere. Here, again, are large, historic plantings, many of which you will not see in many other gardens.

A famous inhabitant is the more familiar palm *Sabal bermudana*, though the specimen here is over 200 years old! Other giants are the bamboo, *Bambusa vulgaris*, from India with its thick culms, and a *Livistona australis* almost 20 ft. (6 m) tall.

Very impressive was the tallest *Hedyscepe canterburyana* I have ever seen, over 16 ft. (4.8 m) high and carrying some ripening fruit. This is a favourite palm of mine and one of a small number of species that I found grows well inside the home.

Amongst the rarities are three 'primitive' members of the conifer family, *Araucaria hunsteinii* from New Guinea (planted 1962), *Podocarpus milanjanus* from temperate East Africa, and

Taiwania cryptomenioides. An attractive evergreen tree from the cooler high altitude regions of Thailand, Gordonia dalgleishiana, also 'stood out' amongst the plantings.

At the opposite end of the 'complex' is another house worthy of mention, devoted to the collection of plants that occur at high altitudes in the tropics. It is cool, airy and humid, with logs dripping with mosses and epiphytes, many of which are species of Vireya Rhododendrons, such as R. stenophyllum from the island of Sarawak. It carried large, waxy orange flowers on a small bush of narrow leaves, each edged in dark red-stunning!

Magnificent too is a climber from New Guinea, Tecomanthe volubilis, with divided leaves and masses of large, pink, bell-shaped flowers, pure white inside.

More sinister is the large collection of insect eating plants that are also grown here. Amongst these is a huge clump of the 'sun pitcher', Heliamphora nutans from the summit of the Tepuis of Venezuela, a plant adapted to a specialised habitat that is very difficult to cultivate. Many of you will be familiar with the heat loving genus of 'pitcher' plants, Nepenthes, but may not be aware of the cooler growing species from locations such as the slopes of Mount Kinabalou on Borneo. Three such species are represented, N. fusca, N. sanderiana, and N. rajah that carries giant pitchers at ground level.

The outside area surrounding the glasshouses is also richly planted with a wide selection of semi-tender bulb, perennial and shrub species. Most notable were several large clumps of Fascicularia bicolor, almost all resplendent with their scarlet, 'autumn leaf' colour. A fine clump, almost 5 ft. (1.5 m) tall, of the species 'busy lizzy', Impatiens tinctoria from the volcanic slopes of central Africa, was full of its substantial blooms. Resembling large white butterflies floating over the foliage, the flowers make this species nothing like its relatives used in summer bedding schemes. A large Lapageria is trained up a shady wall and was heavy with the large, waxy, bell-shaped blooms that make

it such a prized feature of any garden that it finds to its liking. It is not always easy to please. Not doing so well was a modest Chamaerops; perhaps the cooler climate isn't quite to its liking?

Between the 'old palm house' and northernmost section of the main glasshouse range is an area where Trachycarpus and primitive conifers such as Araucaria, Ginkgo and Metasequoia flourish, no doubt appreciating the higher rainfall. It is here that one of the 'oldest' plants in the garden can be found. This 10.5 m (35 ft.) long fossilised trunk of a pitys tree was excavated from a local quarry, having grown in this area 320 million years ago.

This is certainly a garden to which I would like to return with enough time to really explore and appreciate the wonderful range of unique plants that are grown there.



*Top: Glasshouse range with fossil trunk visible in foreground.
Bottom: Tree fern house.
Photos: Tony King*



On the identity of Musa sp. 'Yunnan'

D R Constantine, Bridgwater, Somerset, U.K.

In February 2000, Toby Spanner introduced seed of Musa sp. "Yunnan" into commerce with the following announcement in his newsletter:

Musa sp. "Yunnan" - Yunnan Banana

These seeds originally came in as the rare *Ensete wilsonii*, the Snow Banana; however, seed shape and size suggest that the seeds are not *Ensete* but *Musa* sp. Our collector insists that the seeds were collected at very high altitude in China's Yunnan province, where *Ensete wilsonii* usually grows up to 2700 m (9000 ft.). Even with its identity not cleared yet we think this could be a very interesting cold hardy species that would probably thrive under the same conditions as the legendary *Musa basjoo* and *M. sikkimensis*.

From the outset, "Yunnan" aroused particular interest in horticulture because of its hoped for cold tolerance and its graceful, garden worthy habit. Some were also intrigued by its enigmatic origin.

As part of a wider study, a Finnish *Musa* researcher named Markku Häkkinen made a comparison in 2002 of seed and seedlings of "Yunnan" and a Vietnamese banana known as *Chuoï Rung Hoa Soan* (CRHS). Markku found that in the physical characteristics of the seed and the vegetative characteristics of the young plants, "Yunnan" and CRHS appeared to be identical.

CRHS was first found in north west Vietnam by an INIBAP/VASI collecting mission in 1994. The plant was given the accession number VN1-054 and in an internal VASI report it was identified

as *Musa itinerans*. The precise basis for the identification is not clear but it seems to have been made because of the similar habit in the field of CRHS and *Musa itinerans* (*Chuoï Rung* in Vietnam). *Musa itinerans* is characterised by its extremely long rhizomes so that suckers pop up two metres or more away from the parent stem. This characteristic astonished scientists at the Imperial College of Tropical Agriculture in Trinidad who were the first to describe the species. The name of the species derives from this itinerant habit which was also reportedly seen in CRHS in the field in Vietnam.

Markku's work seemed to indicate that "Yunnan" and CRHS were one and the same. Markku discussed his work with Liu Aizhong, a specialist in Chinese *Musaceae*, who confirmed that *Musa itinerans* was rather common in Yunnan. It seemed, therefore, not to be very surprising that the seed collected in Yunnan and offered to Toby was indeed *Musa itinerans*. Markku and Aizhong's conclusion was the basis of Toby's note in his March 2002 newsletter that "Yunnan" was *Musa itinerans*:

With the help of some dedicated "Musophiles" in Finland and China, we were finally able to identify the banana that we have been distributing as *Musa* sp. "Yunnan". It seems to be *Musa itinerans*, a species fairly widely distributed in China, but as to our knowledge, still very rare in cultivation.

Doubts remained. The remarkable suckering habit of *Musa itinerans* had not been reported in plants of "Yunnan" in cultivation. Seedlings suckered profusely, but always close to the parent stem; close even in comparison to other *Musa*

species. There were other vegetative dissimilarities noted between "Yunnan" in cultivation and the type description of *Musa itinerans* in the botanical literature. For example, "Yunnan" is a rather waxy plant whereas the leaf sheaths and petioles of *Musa itinerans* are devoid of wax. The leaf apex of *Musa itinerans* is truncate and the base rounded whereas the leaf apex of "Yunnan" is somewhat acute and the base distinctly auriculate. *Musa itinerans* has the robust vegetative habit and stature of a cultivated banana, whereas "Yunnan" has a rather slender, graceful habit.

The type description of *Musa itinerans* was based on plants growing in the open ground in Trinidad from Burmese seed, whereas the features of "Yunnan" mentioned here were from plants growing under glass in Europe from Chinese seed. These vegetative differences could simply represent a spectrum of types within *Musa itinerans*. Further, there was no information from European plants on inflorescence characteristics that are critical in diagnosing a species. Despite these shortcomings, the apparent differences in vegetative characteristics were nonetheless intriguing, and discussion continued. In April 2002, in an exchange of E-mails on this subject with Markku and Aizhong, Markku provided pictures of the male bud of CRHS taken in Vietnam during the INIBAP/VASI mission. It thus became possible to compare the male bud of CRHS with that of *Musa itinerans*. They were immediately seen to be completely different.

Musa itinerans has a rather plain, convolute male bud whereas CRHS has an extraordinary, colourful and very distinctly imbricate male bud. In one published report, the INIBAP/VASI mission described the inflorescence of CRHS as having "bright yellow bracts with distinctive dried up tips arranged spirally on the markedly imbricate male bud".

From the photographic evidence, it seemed obvious that "Yunnan"/CRHS could not be *Musa itinerans*. Rather, it seemed clear that "Yunnan"/CRHS, was a hitherto unrecognised, new *Musa* species.

The discovery of a new *Musa* in Vietnam (CRHS) would not be very surprising as much of that country is biologically, let alone botanically, little explored. However, the discovery of a new *Musa* in China ("Yunnan") and in highly botanised Yunnan of all places would be very surprising indeed. Liu Aizhong knows more about Chinese bananas than anyone, from the field as well as the herbarium, and has done much to clarify the tremendous confusion in the Chinese literature on *Musa*. Yet, Aizhong did not recognise CRHS at all, and neither did another great authority on the bananas, George Argent of RBG Edinburgh.

The evidence suggested that "Yunnan"/CRHS could not be *Musa itinerans*. Then, in August 2002, Eric Schmidt published photographs of "Yunnan" flowering in cultivation for the first time at the Harry P. Leu Gardens in Orlando, Florida. This turned the story on its head.

Eric published two photographs of the inflorescence of "Yunnan" on the Zingiber discussion group Internet site. Eric's photographs clearly showed that the inflorescence of "Yunnan" resembled *Musa itinerans* and not CRHS. Despite the fact that the Leu Gardens plants do not show the long suckers but form "a tight clump with very slender stalks", it seemed that "Yunnan" was *Musa itinerans* after all!

The identification of "Yunnan" as *Musa itinerans* seems to be correct, although we are still left with some questions. "Yunnan" and CRHS cannot be the same species, however similar the seed and young plants appeared to be in Markku's study. Was Markku supplied with seed of *Musa itinerans* in the first place and not CRHS? It seems clear that the determination of CRHS as *Musa itinerans* in the internal VASI report is wrong. So what is CRHS? It really does seem to be a new, hitherto unrecognised species. What is the significance of the discrepancies in the vegetative characteristics of "Yunnan" and the type description of *Musa itinerans*? It may be significant that the type was described from a very limited sampling of the species from Burma rather than

from knowledge of the species across its range in the field. Is it significant that while "Yunnan" suckers freely in cultivation, long, itinerant rhizomes so characteristic of *Musa itinerans* have not yet been reported, even on flowering plants of "Yunnan" grown in the open ground at the Harry P. Leu Gardens in Florida? It is possible that "Yunnan" represents a distinct subspecies of *M. itinerans*. Although the botanical affiliations of the plant are not fully known, it seems reasonable now to treat Toby's "Yunnan" as a cultivar, namely *M. itinerans* "Yunnan".

Among other things, this story reveals that there is still much to discover about the wild *Musa* species of Asia and that we may expect further exciting introductions. We await the formal description of CHRS as a new species, and possibly the first to have been "discovered" via the Internet! There will surely be more to come on this subject in the future.

D. R. Constantine maintains a website on the Musaceae at www.users.globalnet.co.uk/~drc and sells bananas etc. at www.kobakoba.co.uk



Top left: Musa itinerans flowering in a field collection (probably at the Phu Ho Fruit Research Centre) in Vietnam.

Photo: Markku Häkkinen.

Top right: Yunnan" flowering for the first time in cultivation in the Harry P. Leu Gardens, Orlando, Florida.

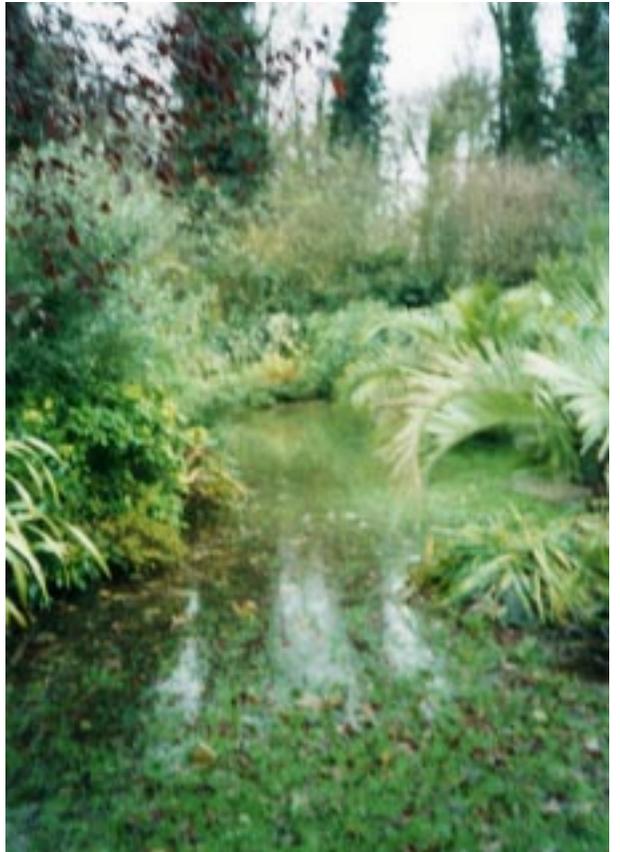
Photo: Eric Schmidt.

Bottom left: Well grown vegetative plant of "Yunnan" in the garden of Marc Vissers, Belgium. The waxy pseudostem and bluish hue of the plant, although different from the type description of M. itinerans, seems typical of the appearance of the plants in cultivation in Europe.

Photo: Marc Vissers

Bottom right: Rain, rain, rain and more of the same! Article see page 5.

Photo: John Kenaban



Subtropical Lake District

By Jim Reynolds, Vancouver, B. C., Canada

I was very fortunate to be able to spend a couple of days this August in the Lake Lugano/Lake Maggiore areas of the Swiss/Italian lake district. These areas have abundant subtropical vegetation and show what can be achieved by generations of careful landscaping.

Lake Lugano is a lake in southern Switzerland and northern Italy at the southern foot of the Alps. It is surrounded by mountains and hills which protect it from the cold climate that dominates most of Switzerland. The area of the lake is about 49 square kilometers or 19 square miles. The town of Lugano is located on the northern shore of the lake in the Swiss canton of Ticino. The influence of Italian culture is evident and Italian is the local language. The population is only about 30,000 but it is Switzerland's third largest banking centre and many of the bankers and their customers come from Italy. The town is pretty with many narrow streets lined with shops selling Swiss watches and other merchandise. The major attraction for me was the constant presence of subtropical vegetation and especially hundreds of mature Windmill Palms. I have never seen so many. They are literally in every vista - in the town, along the lake and in the surrounding farming areas. There are also many examples of yucca, cordyline, Musa basjoo and canna. It is very difficult to believe that one is in Switzerland and not in some part of the tropics.

Lake Maggiore is located to the west of Lake Lugano and is much larger. It too lies between Switzerland and Italy. It is the second largest lake in Italy and is about 64 kilometers long and 212 square kilometers or 82 square miles in area. I visited the old town of Stresa on the western shore of the lake. You can take a ferry from there to the Boromean archipelago consisting of three main islands: Isla Bella, Isla Madre and Isla Pescatoria.

These islands have been in the possession of the Borromea family of Milan since the Italian Renaissance. Saint Charles Borromea, a member of the family, was appointed cardinal and archbishop of Milan in 1560. The family still lives at the Palazzo Borromea, which dominates Isla Bella for part of the year, but it is now open to tourists. The palace was built in the seventeenth century in the Baroque style and has very impressive architecture and a large collection of paintings and antiques. Again, I was most impressed by the formal Italian gardens. There are ten formal terraces that tier down to the level of the lake. The long hedges of yew and cypress enclose the gardens with their obelisks, statues, and cascading fountains and vistas of the lake. The vegetation is Mediterranean or subtropical with palms, cordylines, canna, gunnera, taro and some bananas. An even more impressive collection of luxuriant plants is to be found in the botanical gardens on the neighbouring island of Isla Madre.

My only regret is that there was not enough time to visit the nearby Villa Taranta which has an outstanding garden created in 1931 with plants from around the world. Like the gardens on the Borromean islands, it attracts garden enthusiasts from around the world. That must wait for another time.



Top left: A massive, more than one hundred year old Jubaea chilensis at the Villa Charlotta, Lago Maggiore.

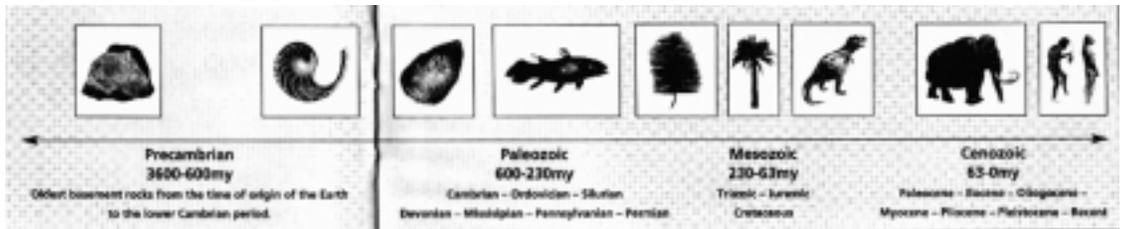
Top right: Jubaea chilensis on the Isola Madre, Lago Maggiore. Butia and Brabea in foreground.

Bottom: The beautiful garden on the Isole di Brissago, Lago Maggiore, with Musa basjoo, Brabea armata and two large Phoenix canariensis from left to right.

Photos: Gerard Pury



A Glance Through Time



The landscape that faced the Coelacanth(1) 400-300 million years ago was a dismal one, with low-growing plants, mosses and lichens. Some 230 million years ago, when palm-like plants started appearing, the earth was already more than 3000 million years old(2).

By the upper Cretaceous period (90-63 million years ago) the first definite palms started appearing, although palm-like fossil imprints date back further to the Triassic era. In North America most of the fossil palms occur in the rocks of the Eocene epoch from 58-36 million years ago. During this period Sabal-like palms grew in England and France. By the time that modern man had gained sufficient brain mass(3) to appreciate, study, classify and amass collections of palms, they had already been in existence for almost 100 million years.

During the carboniferous age our world was a very different place. The polar caps did not occupy their present positions(4) and countries that today are palmless teemed with tropical plants and animal life. Discoveries of petrified palm trunks in Arizona and Texas and fossil leaf imprints in rock formations in Wyoming betray their existence before the breaking-up of the Pangaeon continent.

The subsequent ice ages, the last occurring some 12000 years ago, led to their migration and transformation into the palms we recognize in the present day. From Argonne and Aturien de Fuveau, in France, and in the old delta mud and clay under

London, fossil evidence of *Nipadites heberti* indicates that this area was once the home of the present *Nypa fruticans* now restricted to Asia. It is interesting to note that while the Sabalites retreated west (where they are now found) from Venezuela (represented by *S. mauritiiformis*) to Louisiana (represented by *Sabal minor*), *Nypa* emigrated east(5). Fossil fragments of *Chamaerops helvetica* in France indicate that they did not have to retreat far to where they presently occur naturally in the Mediterranean and North Africa.

"One important factor for setting the stage for petrification is the rapid submergence of the trunk and roots (including leaves and seeds) in a body of water where oxygen is absent. Another important factor is deposition in the water of finely divided sediments such as clay, mud, sand and volcanic ash."(6)

In modern times, the palm in its diversity has become for millions of people a major source of food. Some varieties have been improved by selection to supply greater yields, better texture and tastes. Its leaves supply thatch, material for baskets, ropes, mats and countless everyday articles. >From its fruit, seed(7) and leaves, oils and waxes are obtained. For some it is simply an object of beauty to be admired.

1 *Latimeria chalumnae* (old four legs) and the Lungfish are regarded as the forefathers of the land animals.

2 No one can correctly establish the age of

the earth. It begins with basal sedimentary rock formations 4000-3500 million years ago.

3 1300-1500 ml

4 Coal deposits in Antarctica indicate that it once teemed with plant life during Carboniferous Period. Interestingly, coal is derived from plant matter, while oil is from animal origins.

5 *Nypa fruticans* also occurs in the estuaries of certain west African rivers (introduced).

6 Tuta J. Fossil Palms Princ. 11(2)

7 The potato crisps you are eating right now have been fried in the oil of *Elaeis guineensis*. It is also used in the manufacture of ice cream.

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