

# HUNTINGTON

Girija & Viru Viraraghavan

Girija's and Viru's lecture while receiving 'The Great Rosarians of the World' Award, January 2006 at Huntington gardens and library, California USA

Girija starts the lecture:

"Oh! No man knows through what wild centuries roves back the rose" as Walter de la Mare so rightly said.

A charming thought, but somewhat aggravating to rose lovers who would like to know when the fascination of man for roses started. Even more frustrating for an Indian rose historian like me is the fact that there is no written record in India covering periods where civilization was otherwise greatly advanced, like the Indus Valley Civilization (2500-1500 B.C.). But obviously the association of roses with India's history goes back to well over 5000 years. But, as earliest Indian history is based on oral tradition and not the written word, one has to depend on traditional myths, legends and folklore.

One such legend, widely related even today, harks back to the time when the Gods were said to live on earth. Brahma, the God of Creation, and Vishnu, the God of Protection had a debate about which flower was the most beautiful. Brahma favored the lotus while Vishnu preferred the rose. Upon being shown the arbor laden with fragrant roses in Vishnu's celestial garden, Brahma conceded the argument.

The presumption that such legends are rooted in reality is reinforced by the fact that the abode of the Gods has always been considered to be the Himalayas - this 2500 mile long sweeping chain of snow capped mountains, stretching from the north west to the north east of India, is also home to many wild rose species.

References in the medical treatises of the doctors, Charaka, a physician and Susruta, a surgeon - they are together the founders of Ayurveda - the Indian system of medicine - ('ayurveda' literally translates as the 'science of life') who are believed to have lived in the first century before Christ, gives ample proof that roses were known in those days. The rose was known by many names, in the language of those times, Sanskrit, and each name was in fact an adjective symbolizing a particular characteristic, of its curative efficacy for a particular symptom or illness. Thus it was considered to be cooling, a laxative, an appetizer, it cured fever and boils, it lessened stomach burning.

Many other texts mention the rose in different contexts. One called 'Kashyapa's Agricultural Treatise' lists the rose among other plants, trees and climbers that a

king should plant within his kingdom. Another manuscript (Chakrapani Misra's 'Visva-vallabha') states that the rose is an indicator of underground water.

When Alexander the Great invaded India, on its north west border in 327 B.C., it is said that he was amazed at the wealth of plants he beheld, and among others he sent back some rose plants to his mentor Aristotle.

Coming into the Christian era, the monk Vatsyayana, who wrote the 'Kama Sutra' (A Manual of Love) around 100 A.D., gives a list of the duties of a virtuous wife, and one of them is to tend a garden, which would have a number of flowering and fragrant plants, and the rose is one of them.

The poet Kalyana Malla's book, 'Ananga Ranga' (written about 1172 A.D.) describes the ambience of a room best suited for amorous interludes, and mentions the lavish use of rose water. Both these books have been translated by Sir Richard Burton .

Though Avicenna (Ibn Senna) of Persia is credited with the discovery of rose water by distillation, the Ayurvedic text of Charaka, the doctor, has references to rose water, and the Buddhist sage, Nagarjuna, who was an alchemist, describes the process of distillation in his scientific treatise, Arkaprakash.

The rose used in those bygone days would have been what was later referred to as *Rosa damascena* var. *semperflorens*, or the Autumn Damask, or the 'monthly rose' – not the Kazanlik rose. Even today, rose water is made in India from a present day hybrid of this rose called the "Bussorah" rose. **(Show slide of R. Edward)**. This is called '**panneer**' rose. 'Panneer' means rose water.

Trade with China existed from around 1000 B.C. as many Chinese scholars came to the land of the Buddha. When the Buddhist travelers Fa Hien and Hiuen Tsang (5<sup>th</sup> and 7<sup>th</sup> centuries) visited many of the sacred places associated with the Buddha, they mention the beautiful gardens, replete with roses and many other flowers and fountains, which they saw and marvelled .

The 'Gita Govinda' of poet Jayadeva (written in 1150 A.D.) and translated by Sir Edwin Arnold (who is more known for his "Light of Asia") is replete with references to roses.

A Muslim traveler to India, Rashid-ud-din (1247-1317) who is considered to be the most reliable of Persian historians (by Percy Browne) visited the western Indian state of Gujerat in 1300 A.D. and remarked (I quote) 'the people are very wealthy and happy and grow no less than 70 kinds of roses'.

From the 14<sup>th</sup> to the 16<sup>th</sup> centuries one of the greatest and most splendiferous of dynasties was the Vijayanagar Kingdom of southern India. Two Portuguese travelers, Domingo Paes and Fernaz Nuniz who visited this kingdom in 1537 were amazed to see that roses were integral to the daily life of both aristocrats and commoners. They saw plantations of roses in the countryside, and the bazaars of the capital city of Hampi had many shops with baskets laden with roses. Men and women adorned themselves with roses. And the king of the time, the mighty Krishna Deva Raya, a great scholar-poet-warrior, dressed in silken robes of pure white embroidered with golden roses, would, every morning, when he gave audience, shower his favorite horses and elephants and courtiers, with white roses. The king's bedchamber (and I quote) 'had pillars of carved stone, the walls all of ivory, as also the pillars of the cross-timbers, which at the top had roses carved out of ivory, all beautifully executed and so rich and beautiful that you would hardly find anywhere another such'.

Another traveler, Abdur Razzak who visited this kingdom earlier in 1443 writes 'Roses are sold everywhere. These people could not live without roses and they look upon these as quite as necessary as food'.

In the 16<sup>th</sup> century the Muslim Mughal emperors came from Persia and Afghanistan to rule India. The first emperor, Babur (1483-1530 ), brought camel loads of roses - most probably musk and damask roses. His love for roses is epitomized by his poem:

'My heart, like the bud of the red, red rose,  
Lies fold within fold aflame;  
Would the breath of even a myriad Springs  
Blow my heart's bud to a rose?'

He was so enamoured of roses that he named all his daughters rose adjectives – Gul chihra, Gul izar, Gulbadan and Gul rang. Gul means rose in Persian. **(Show slide of rose in Gulbadan's honor)**

Babur developed the formal geometric 'char bagh' (four quadrants) design of Mughal gardens, where many roses were planted. This style was refined by later kings and the Mughal gardens in Kashmir - the Shalimar garden, and in Agra, in the Taj Mahal and in Delhi, the capital, were world famous. **(Show slides of paintings with gardens)**

Emperor Akbar (1556 -1605) invariably took camel loads of roses to give to the wives of his allies.

The next Mughal Emperor Jehangir's wife, Nur Jehan is credited with the discovery of rose oil, called attar in Persian, while she was taking a rose scented hot bath.

The finest of rose liquors was distilled for the aristocracy – about 20,000 flowers for one bottle of liquor.

Manucci, the 17<sup>th</sup> century Italian traveler was amazed to see that the nobles not only used huge quantities of rose water and oil on themselves, but even rubbed their horses with these as a matter of course.

Nearly every painting of this period shows the subject of the painting holding a rose in his or her hand. **(Show slide of paintings. Mention others which are in the exhibition)**

When the British came to India, in the 17<sup>th</sup> century, originally as a trading company – the East India Company – their ships from China, carrying merchandise - tea and opium - to England would stop over at Calcutta on India's east coast. Most of these ships carried live plants including roses, and they would be kept in the Botanical Garden in Howrah, near Calcutta, to recover before their onward journey to England. This botanical garden was started by Sir William Roxburgh in 1793. His book, 'Flora Indica' published in 1832 mentions many rose species as growing in the garden. Many would have come from China, as did Fortune's Double Yellow and other Chinas and early Teas. Quite a number of these are still available in old nurseries and Viru and I are systematically collecting all these old roses – all nameless! **(Show slides of Roxburgh paintings of roses)**. *R. roxburghii* has been named in his honour. Indeed, *R. laevigata* – your Cherokee Rose – was introduced into the U.S. by the East India Company in 1759.

Indeed, import of roses from China must have started much before the days of the East India company by the land route - the Silk Route - and by sea during the heyday of the Chola dynasty of South India (1000A.D.)

Even today there are a number of 'mystery' roses that do not appear to be what came from China to the Calcutta Botanical Garden. An interesting example is the red rose used even today in garlands. **(Show slide of Kakinada Red)** Another is the white rose of Vijayanagar mentioned earlier. Which must obviously have been a Chinese import as it was used on a very large scale during the festival of Dussehra which falls in October. Clearly, a repeat flowering white rose.

Sadly, even more recent introductions have been lost, like the fascinating double form of *R. clinophylla* mentioned as common in northern India by Rev. Firminger, in the 1900's.

From trade, the East India Company metamorphosed into a colonial power, fighting local kingdoms and annexing vast tracts of land so that by the 1900's India was ruled by the King of England.

One such king, in the deep south of India that the British fought and vanquished, was Tipu Sultan, a Muslim king who ruled the state of Mysore from 1749 – 1799. Tipu was a great lover of plants and especially of roses and he named his garden 'Lal - Bagh', which means the Red Garden, because of its huge beds of red roses. We surmise that they must have been repeat-flowering Chinas, as the hot summers and very mild winters would have killed any once flowering varieties.

**(Show slides of Tipu Sultan)**

The British, as indeed other Europeans – we had the French, the Dutch and the Portuguese annexing territories in India - were great botanists, and they plant-collected all over the country. *R. clinophylla* (called *R. involucrata* then) was sent to Roxburgh in Calcutta by Francis Buchanan Hamilton in 1803. There is an

interesting description in 'The Book of Roses – The Rose Fancier's Manual' (1838) by a Mrs. Gore: I quote 'The parched shores of the Gulf of Bengal are covered, during the spring, with a beautiful rose, found also in China and Nepal. The flowers of the *Rosa involucrata* are white, solitary, surrounded with a collar of three or four leaves, out of which they seem to emerge; while in the vast thicket of the beautiful *Rosa semperflorens* (a native also of China) the tigers of Bengal and crocodiles of the Ganges are known to lie in wait for their prey'.

*R. gigantea*, the 'Empress of Roses' as Graham Stuart Thomas called it, was discovered by Sir George Watt, Surveyor General to the British India Government, in 1882 in Manipur in north-east India. But it was introduced by General Sir Henry Collett in 1888 who sent seeds to the Calcutta Botanical Garden, which in turn sent them to Kew and to Monseur Crepin, the taxonomist in Brussels.

Viru Viraraghavan now continues:

The period of British rule (1600-1947) also saw the establishment of great rose collections. One of the most outstanding was Sims Park in Coonoor in the Nilgiri Mountains of southern India, established in 1874. Even as late as the 1950s this garden boasted of a comprehensive collection of many of the early H.T.'s, including a large number of the Pernet hybrids. I still recall the excitement with which I beheld for the first time, in 1951, the blooms of the golden yellow 'Julien Potin'. There were many others like the excellent specimens of the bicolor 'Condesa de Sástago' and the creamy yellow and red 'Rev. F. Paige Roberts' (H.T. 1921). An impressive garden feature was the giant standards of the H.T. 'President Macia' - enormous flowers in shell pink, but yet endowed with an amazing elegance, no doubt, the gift of its immediate parent, 'Ophelia'. I still grow it and it can be found flowering happily in many and otherwise neglected gardens in our hills.

The same Nilgiri Mountains had a fantastic collection of over 1500 roses owned by the Maharaja of Pitapuram, a princely state.

Sir Edwin Lutyens, the famous British architect who designed the Viceregal Lodge in Delhi in the early 20<sup>th</sup> century (which later became the President of India's official residence) also designed and laid out, around it, a magnificent Mughal style formal garden which boasted an array of roses. This garden is open to the public every Spring.

Soon after Independence, in 1947, a spanking new capital was built for the state of Punjab (north India) by the well known French architect, le Corbusier and a beautiful 30 acre rose garden laid out. This is now called 'The Zakir Hussain Rose Garden' named after a President of India who was a connoisseur of roses. A feature of this garden commented upon rapturously by the English author

Hazel le Rougetel talks of her sitting in the shade of the climbing Noisette, 'Maréchal Niel'.

Much more recently, in 1995, was started the Centenary Rose Park in Ootacamund in the same Nilgiri Mountains mentioned earlier, which has over 2000 varieties, mainly modern roses.

You would have seen photographs of some of these gardens in the Exhibition mounted by Clair.

The rose movement in India gathered strength with the establishment of many rose societies including the doyen of them all, the Rose Society of India, in Delhi. An apex body, the Indian Rose Federation, representing these societies, was founded in 1978 and a rose annual, which highlights developments in the rose world, both Indian and global, is published in time for the annual national rose convention held every January.

One outstanding innovation which contributed to the growth of the rose movement, was the 'Polybag' method of rose propagation, which was the brain child of Mr. N.A. Joshi, an engineer, not a horticulturist, of Western India. A flow chart showing how this is done is in the Exhibition. Without exaggeration, some millions of roses have been budded by this method. May I add that planting roses dispatched bare-root in the tropical warmth of India is a heartbreaking experience for most rosarians, and so the polybag method was very timely indeed.

So far we have been concerned with the past and the present rose scenario in India. But the emphasis of this talk is really on future development. The philosophy of the new wave of rose experimentation in India mirrors, interestingly enough, what the imperialist British author, Rudyard Kipling, wrote: 'East is East and West is West and never the twain shall meet'. Without getting into the cultural veracity of this, there is no doubt that Western roses are hardly suited for the Eastern situation or, for that matter, Northern roses for Southern climates like yours. On the latter subject, many American writers have lamented on the craze for modern Hybrid Teas, even in the warmer parts of the U.S. overlooking the pristine merits of the warm climate roses of yesteryear – the Chinas, the Teas and the Noisettes.

The same trend prevailed in India too, and, it is pertinent to point out that with every generation of the modern Hybrids Teas, raised with the objective of cold tolerance in Europe or the U.S., the Hybrid Tea becomes less and less suited for the warmer parts of the world.

A separate line of breeding is clearly required and the need for such a line was explicitly enunciated for the first time as far back as 1930 by India's premier rose breeder, Mr. B.S. Bhattacharji. Much earlier, a well known English horticulturist, Rev. Firminger, who was based in Calcutta, wrote in 1904 in his 'Manual of Gardening for India' that roses belong to two well defined groups - one, the roses

of Europe and Western Asia for example, the French and damask roses, and, two, the roses of eastern Asia such as the Chinas, Bengal and Bourbon roses. I quote him: "Now, scarcely a rose of the first of these groups has been found to succeed in this country, while roses of the second group, as far as my observation goes, bloom far more beautifully in India than in England".

It is good to remind ourselves that when we talk of roses in India we are talking of a flowering season which extends from early winter (November) to spring (March). If an Indian were to write an ode to the rose, à la Thomas Moore, he would extol the first rose of winter, not the last rose of summer!!

Bhattacharji's dictum made a powerful impact on me, as did the sage observation of the great Wilhelm Kordes, of 'Crimson Glory' fame, who observed that the soup ladle would only bring out only what was in the soup tureen. Which, of course, means that fresh blood is needed if real progress is to be achieved.

Before taking up this matter of warm climate rose breeding it is appropriate to mention the pioneer Indian hybridisers. The first notable one was Bhattacharji and one of his most famous roses is the extravagantly fragrant red rose 'Sugandha' which was pictured in a series of rose stamps issued by the Indian government. **(Show slide of Sugandha)** Bhattacharji was a pre-Independence figure but it was the eminent agricultural scientist, Dr B.P. Pal (1906-1989) who really pioneered modern rose breeding in India. Dr Pal, who rose to become the Director General of the Indian Agriculture Research Institute, in New Delhi, a premier facility, was an ardent lover of roses. In a rose career starting from a childhood spent in Burma, Dr Pal was involved in growing and breeding roses for over 27 years. He talks in his book, *The Rose in India*, 1st edition, 1966, of how he was able to grow roses such as 'Frau Karl Druschki' and 'Climbing Captain Christy' in the warm monsoon climate of lower Burma in stiff clayey soil. Dr Pal contributed immensely to the Indian rose scene by his own breeding work and by initiating similar breeding in the Indian Agriculture Research Institute. **(Show slides)**

I am proud and honoured to have known him and to have been encouraged by him in my efforts. I cannot resist quoting what he wrote about my work: "Whereas most other breeders, whether working in nurseries, institutes or on their own, have tended to adopt what I call the safer 'bird in hand' policy, as regards the selection of parent varieties for their crosses and their objectives they set themselves, Viraraghavan appears to have agreed with Bret Harte who wrote 'a bird in the hand is a certainty, but a bird in the bush may sing'". "May sing" is right – I am still waiting for my signatur tune !!!.

Notable hybridizing has also been done, and, happily, is still continuing, by Mr. G. Kasturirangan, the owner of India's largest rose nursery. His catalogue lists over 1500 varieties. **(Show 2 slides of Kasturi's)** In western India and in Bengal too there are many amateur rose breeders. However their emphasis is on producing

more Hybrid Teas rather than taking advantage of the excellent possibility of breeding new forms of the great roses of the East.

All of us are united in our anxiety that the rose should remain the world's favorite flower, but will this happen? The reality is that economic development is taking place rapidly in the warmer regions of the world, but without roses. A typical example is the otherwise garden loving state of Singapore, where obviously the people are very fond of gardening, but there is hardly a rose to be seen. Clearly roses suitable for tropical regions are in short supply.

Recently I met a horticulturist working in the botanical garden in Pattaya on the Thailand coast, who told me that they grow only one rose - a traditional but unidentified pink variety.

Obviously breeding to evolve roses for warm climates is a must. What should be the objectives?

The emphasis has to be on creating heat resistant roses, which fit happily in the modern garden along with many other flowering and foliage plants. For this we need roses with better plant habit, bushy and free flowering, with fragrant flowers, in a much wider color range than the traditional Chinas and Teas, but more than anything else, it is the foliage that is of vital importance in a tropical situation. Tropical plants are endowed with beautiful evergreen foliage and the rose must be one such. Unless we make roses with disease resistant evergreen foliage which will look good even when not in bloom, the chances of the rose being widely planted in warm climate are dim indeed.

You may ask: is this possible? I have no doubt in my mind that it is in eminently feasible to produce roses with outstanding foliage. A most encouraging feature of the rose world is that evergreen rose species, which will have to be the foundation for evergreen garden roses are all natives of the warmer parts of the world. Species like *R. clinophylla* and *R. gigantea* with which I am working, as well as a host of others – *R. laevigata*, *R. bracteata*, *R. longicuspis*, *R. cymosa*, *R. sempervirens*, *R. banksia* etc will have to be used in this hybridizing programme.

As I said, I am working with two Indian rose species:  
*R. clinophylla* and *R. gigantea*.

*R. clinophylla* is unique in the rose world - it is the only tropical wild rose. It exists in 3 forms, all of which have the astounding characteristic of being semi aquatic. Like a dream come true, the 3 forms cover every kind of warm climate.

1. The Bengal form, from eastern India is well adapted to humid warmth. It is found in such improbable habitats like the islands in India's great river, the Ganges, which are submerged under water for nearly 6 months. But *R. clinophylla* survives happily enough.



2. The 2<sup>nd</sup> form comes from stream margins in the dry hills of Bihar State, to the west of Bengal. Summer temperatures reach 45 degrees Centigrade and remain like that from mid May to July every year. But the species is well adapted to such heat and drought.
3. The 3<sup>rd</sup> form comes from a mountain, called Mount Abu in the Thar Desert in Western India near the border with Pakistan. Though at 1200 metres elevation and therefore not so hot, it can get very dry as only a desert can. In winter there are sharp frosts with day temperatures at 25 degrees Centigrade.

**(Show slides of *R. clinophylla*)**

This must be a special rose adapted to a wide range of hot climates. Apart from resistance to water logging, a common problem in warm wet climates the species has beautiful glossy evergreen foliage and flowers with a very intriguing scent. Breeding with this species, which is closely related to *R. bracteata* initially proved very difficult. But finally, roses of 'modern' appearance have been raised.

Ralph Moore has raised some miniatures with *R. bracteata*, and I am endeavouring to bring in these into my *clinophylla* line - a very exciting prospect.

I show you now slides of some of my *clinophylla* hybrids.

**(Show slides of *clinophylla* crosses)**

Coming to *R. gigantea*, that "Empress of wild roses" as aptly described by Graham Thomas, it is a giant, not only in the flower – 15 cms. across, but in its growth. It can reach up to 25 metres. I have many plants clambering up my very tall pines. It also has the unique feature of flowering in peak winter. Hybrids with this which should flower in winter, will be a big help for the cut-flower growers in warm climates who would be able to cater for Christmas and St Valentine's celebrations.

Fortunately *gigantea* is easier to work with, because its genes are to be found in the background of modern roses. The high centered form of Hybrid Teas is a direct inheritance from *R. gigantea* as is evident even in first generation hybrids. This apart, to quote Jack Harkness, 'as these roses embody 6 great virtues – health, beauty, vigor, scent, good foliage and remontancy, further direct use seems worthwhile'.

I show you slides of some of my *gigantea* hybrids.

**(Show slides of *gigantea* crosses)**

In conclusion I would like to stress again the need for an original approach. The world is getting warmer and drier. Our roses will need to adapt to such conditions, as also to being part of smaller gardens or of container gardens.

Many of my seedlings in both lines are big sprawling semi climbers. Transforming them into more manageable, free flowering and branching shrub roses, is the next task. Ralph Moore has once again provided part of the answer by stressing the intercrossing of his miniatures, which are free branching and easily propagated by cuttings, with garden roses in order to get shrubs.

I have been toying with another exciting dream - to have 'rose trees', which will be big enough to fend for themselves in summer heat and drought. Is this possible? You would agree that it is not so far fetched an idea when one breeds with the 'chestnut rose' - *R. roxburghii*. Martyn Rix and Roger Phillips have observed that this species forms 5 metres tall giant shrubs, and grows in warm conditions in southern China, on the boundaries of rice fields. The Japanese rose researcher Dr Yuki Mikanagi has noted that the Japanese form of this species forms rose trees 5-6 metres high. Hybrids of *R. roxburghii* (*R. x micrugosa*), a cross with *R. rugosa*, and 'Roxanne' a hybrid with *R. sinowilsonii*, are sizeable shrubs. *Roxburghii* is well adapted to growing in regions where winters are warm but with sudden cold spells.

Breeding with *R. roxburghii*, which has a naturally shrubby, densely branching habit, appears to be very promising indeed, to create rose trees of the future.