

Part A

INTRODUCTORY

1. GENESIS

The development of the *National Cactus and Succulent Botanical Garden and Research Centre, Panchkula*, is very much linked with my interest in Cacti and other Succulents. I first came in contact with Succulents when I visited the MAHARAJA OF PATIALA's collections at Chail and Patiala about forty years ago. Later, I saw a few Cacti of *Mammillaria compressa* group with a professor in my neighbourhood. Till then I had been growing a large number of ornamental and flowering plants only. But the beauty of these Succulents cast a spell on me, and I got hooked onto the hobby of growing Cacti and other Succulents. At that time there were hardly half a dozen growers of these plants in Punjab. Very soon I joined their group and my interest started growing. In 1970, I had a sizeable collection of these plants. At that time it was a considered opinion that they are difficult plants to grow. Hardly anyone grew them from seed. Grafting was considered a difficult technique. In 1972, on a visit to the

United States, I met DR. GERALD BARAD, a gynaecologist by profession--but a very progressive grower of Cacti and other Succulents in New Jersey. The visit to his outdoor collection and glasshouse was an eye opener. DR. BARAD very gladly gave me the 'know how' about these plants. He told me in great detail about his potting mixture for these plants and demonstrated the potting techniques and subsequent care. He educated me about growing seeds by 'Baggy Method' and also demonstrated seedling grafting on *Pereskia* stock to accelerate the growth of Cactus seedlings. His demonstration of grafting Cacti offsets onto other thick stock made it look a very easy affair. DR. BARAD had very few grafted Cacti in his collection. He told me that he uses grafting only to preserve those Cacti which are difficult to grow on their own roots or those which grow slowly. On my subsequent visits to his garden he gave me a large number of plants.

Later that year I went to California, to see the Annual Show of the Cactus and Succulent Society of America in Los Angeles. The show was a mind-boggling affair with thousands of beautiful Cacti and Succulents on show benches. There I met MR. CHARLES GLASS, Editor of the *Cactus and Succulent Society of America Journal*. This meeting turned out to be one of the major events of my life. Two days later, while visiting his huge collection of over 6000 species of Succulents from all over the world, he

showed a plant of *Euphorbia nerifolia* on one of the benches. He told me that, in his huge collection, this was the only Indian Succulent plant with him. To my surprise he informed me that there were two to three hundred Succulent species in the Indian sub-continent, but the Western collections had hardly any plant from India. He requested me to send him a few cuttings or seeds of Indian species.

On my return to India I went to the Botany Department of Panjab University, to know more about the Indian Succulents. To my surprise hardly anyone was interested in Cacti and Succulents. Their advice was outright discouraging. One of the members of the faculty told me that I need not waste my time looking for them: there were only the tree-like *Euphorbias* and some *Opuntia* and *Agave* species in the Shivalik Hills. I could also see a large number of *Aloe vera* plants growing with some persons. He advised me to purchase a few Cacti and Succulents from Kalimpong Nurseries. In spite of this discouraging advice, I started looking for Indian Succulents in the Shivalik Hills between Kalka and Kasauli. I collected a few seedlings of *Euphorbia royaleana*. I realised that I did not know what to look for. Later, MR. S. P. BHANDARI, the most senior colleague in this hobby, joined me on some field trips near Hoshiarpur and Kangra to look for Indian Succulents. At Kangra we found large tubers of

Stephania rotunda LOUREIRO (a plant used in traditional Oriental medicine). MR. BHANDARI also gave me a small book- "*The India Species of the Genus Caralluma (Family Asclepiadaceae)*" by GRAVELY AND MAYURANATHAN. This is an exhaustive treatise on this Genus. Most of these plants are from South India.

In 1974, I was again in the United States and had the good fortune to attend a meeting of the *New Jersey Cactus Society*. DR. JOHN LAVRANOS, a famous explorer of Succulents of Africa, Arabian Peninsula, Socotra, and Madagascar was giving a talk on "*Succulents of Socotra*". After the meeting, I had the good fortune of his company at Dr. G. BARAD's residence. Next morning, when DR. BARAD had gone to the hospital, DR. LAVRANOS spent a few hours giving me notes about the Succulent Flora of India. He told me that the search for these was a virgin field, and that apart from more than 200 odd species described earlier, mainly by the British, there were definitely several species that remain to be described. He advised me to study books available on the Flora of various India regions. He promised all help in the study of any field material collected by me.

DR. G. BARAD, along with his wife BEA, came to India in March 1975, with the main objective of collecting Indian species of orchids. I planned

their trip to Ooty and Mangalore where orchids were known to grow. I accompanied them on this trip. We went to Chennai (then Madras) and DR. BARAD informed me that he would like to collect Indian succulents as well. My first lesson of searching for Indian Succulents was on a dry hill near the Chennai Airport.

On this hill, in a short time, Dr. BARAD found several interesting Succulents. Looking under bushes and Euphorbia clumps, he collected several succulents by digging out tuberous cucurbits (gourd-like vines), *Euphorbia* seedlings and *Cissus quadriangularis* plants. Later we went to Ooty. There with the help of a guide, MR. DASS, from the Botanical Garden, in the forest around Ooty, DR. BARAD collected several species of Indian Orchids and *Hoyas*. The next four days were a whirlwind tour. From Ooty we motored down to Mysore, halting at several places to make a rich haul of Indian Succulents. After a meal at Mysore we started for Pollibeta, our base for collecting orchids at Mangalore. Between Mysore and Pollibeta we made several collections. At Pollibeta, DR. BARAD cleaned and packed his field collections. After a day's rest, we went to Mangalore and DR. BARAD collected a large number of Orchid species around that area. After collections we motored down to Bangalore. The next day, some *Caralluma* collections were made near Bangalore. I came back to Chandigarh, while

the BARADs started their sightseeing tour of India visiting tourist spots. After visiting Chandigarh and Amritsar, the BARADs returned home to U.S.A. with a bagful of Indian Succulents and Orchids.

After this visit I made several incursions around Shivalik Hills and later into Dehradun area. I collected a mixed bag of succulents and sent their samples to LAVRANOS and several friends in the States. Encouraged by this experience and having closely studied GRAVELY AND MAYURANATHAN's paper and acquiring more knowledge from several texts in the Panjab University Library, I planned an extensive trip to South India. Taking one of my farm workers, MR. DAYAL, with me, I started the field trip on 14th December 1976 from Bombay. With advice from some friends there, my extended safari, if I may say so, took me to Pune, Dharwar, Bangalore, Salem and then down south all the way to Kanya Kumari (Cape Comorin). On the way we made extensive collections of Indian Succulents including hundreds of clones of Indian *Carallumas*. On January 6, 1976, we collected our first specimen of a new *Caralluma* near Madurai, which was later described as *Caralluma sarkariae* by FRANDBSEN AND LAVRANOS. Samples of all the Succulents were sent to LAVRANOS and several friends in U.K. and United States. DR. LAVRANOS was quite impressed with the results of this trip and encouraged me to take more field trips. He had been

sending small packets of field collected plants from South Africa. In one of his letters he wrote to me that all the field material being sent to me was very valuable and should be propagated and preserved in a botanical garden. He asked me to approach the Indian Government and ask their help for such a venture. He promised to send at least 1000 species of field collected plants from Africa. Such an offer was unheard of in the Succulent World. Every single field collected plant from LAVRANOS was highly valued. Elated by this offer I met DR. M. S. RANDHAWA, Chairman of the *Chandigarh Landscaping Committee*. He appreciated the idea of a Cactus Botanical Garden and took up the issue of developing a Cactus Garden in Chandigarh. He gave me a letter for the authorities in New Delhi to facilitate the import of plants from South Africa. I spent four to five days running around to different offices without any success.

As a result of the Indian Succulents sent abroad, I was getting a large number of plants and seeds in exchange. I started propagating plants for the proposed Chandigarh Garden. In response to an appeal for seeds and plants, MR. DAVE GRISBY of *Grigsby Nurseries, California*, sent me a large consignment of seeds of *Echinocactus grusonii* and several other species. DR. J. W. DODSON of *International Succulent Institute, San Francisco* sent us a large consignment of plants worth over \$100. Glasshouses were built in

the Government Nursery, in Sector 23, Chandigarh. In spite of my vigorous efforts, very soon I found that an outside volunteer was not welcome. Due to constant non-cooperation from the Horticulture Department, Chandigarh, I withdrew from the project, leaving the plants with them. Luckily, about one-third of the seedlings and plants acquired from abroad were growing at my farm in Kundi village (now in Sector 20, Panchkula).

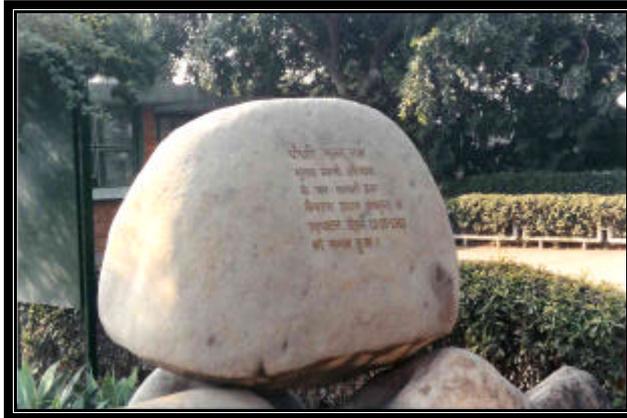
In 1979, PROF. S. C. DUBE, Vice-Chancellor of Jammu University contacted me. I was requested to build a small Cactus Garden in the new University campus site at Jammu. The University authorities were very enthusiastic and cooperative. In a short time I planned and developed a Cactus Garden covering an area of nearly one acre. The experience gained in developing this Garden came very handy in planning and developing the new Botanical Garden of Cacti and Succulents at Panchkula.

In 1985, I had a massive heart attack, which I luckily survived. At that time I had a very big collection of Cacti and other Succulents. Handicapped by the after-effects of this cardiac episode, I could no longer manage my large collection. I offered my collection to the Universities in the region, free of cost, provided they built a large glasshouse to preserve it. There were no takers. In 1986, I had a welcome visitor. MR. JOGI RAM, in-charge of the

Horticulture Wing of the *Haryana Urban Development Authority* (HUDA), Panchkula, the new Township then coming up in Haryana next to Chandigarh, came to see me. He asked me if I could build a Cactus Garden at Panchkula. He informed me that land and finances would be no problem. I agreed to the proposal. After several meetings with MS. LEENA NAIR, the Administrator, HUDA, Panchkula, and subsequently with MR. R. N. PRASHAR, Chief Administrator, HUDA, it was decided to build a Botanical Garden of Cacti and Succulents at Panchkula.

The main aims of the Garden were:

1. Preservation and propagation of Cacti and other Succulents, as most of these were endangered species.
2. Preservation and propagation of Indian Succulents, as quite a large number were endangered in their habitat, and, as very little work had been done on Indian plants, extensive further research was needed.
3. Building a collection of about 2000 species of Cacti and other Succulents in the first phase.



Inauguration Stone

During the early stages, under the dynamic guidance of MS. LEENA NAIR, there was very rapid progress. Propagation glasshouses were quickly built. Architectural plans for the other glasshouses and the Garden layout were made and approved. The garden took shape rapidly. It was thrown open to the public on May 12th 1992, by SHRI BHAJAN LAL, the Chief Minister of Haryana. Like any other opening ceremony in India, this was a big affair. Some weeks before the auspicious date, Architects and Engineers got into action. Instead of the usual marble slab with a flowery language for the ceremony, three large sandstone boulders were placed near the gate and the usual words were engraved. A day before the ceremony a red curtain, bedecked with Marigold flowers was erected in front of the stone. Security sleuths descended on the garden, searching every nook and corner for possible deadly booby traps. Cops were put on night duty in the Garden. Next morning, hordes of

bureaucrats, never seen before in the garden, were in the parking lot ahead of the arrival of the Chief Minister. Amongst those closely associated with the project, some were apprehensive about the reaction of the C.M. to the Cactus Garden. Some very vocal politicians of the opposition had even been critical about the famous Rose Garden of Chandigarh and had advocated sowing wheat crop instead of roses. As the Chief Guest's car drove into the parking area, everyone rushed forward to catch his eye. With usual garlanding and welcoming platitudes, the Chief Minister moved to the red tape in front of the "opening ceremony" stone. Amid clapping and flashing of the photographer's lights, the offending tape was cut, and the curtains pulled aside. The cavalcade moved into the garden, with a tight security cordon around him. As they reached the first mound, one of the more voluble cronies, who hardly ever visited the garden, was trying to eulogise the beauties of cacti and the "Cactus Park" created by them. The words "Cactus Park" alarmed me. I pushed forward through the security cordon and approached the C.M. I introduced myself and offered to show him the garden. I took him around the outdoor features, explaining in detail about various plants. I told him that the garden was still in its infancy, I told him that over the years, when the Golden Barrel Cacti and others matured, it will take on an appearance of unparalleled beauty. The

outdoor round took about twenty minutes. Thereafter he was taken into the glasshouses and shown the botanical collections of *Indian Carallumas* and several other genera.

After this hurricane tour, there was the usual “Tea-Party” in one of the lawns. The Chief Minister was quite pleased with the project and without mincing words lavishly praised our efforts.

Later on, in the “Visitors’ Book” of the garden, requisitioned especially for this purpose by the C.M.’s office, he inserted remarks in chaste Hindi that were extremely encouraging. The translation of some excerpts follows:

“... probably no other place in Asia has such a large number of desert plants ... cacti, growing together in such a beautiful manner ... I congratulate HUDA and Dr. J.S. Sarkaria for this project and hope they will develop it further, more beautifully”

Sd. /-
BHAJAN LAL
12.2.1992