

Newsletter – March 2016

The Orchid Society of Karnataka



21st March 2016



From the Editor's Desk

21st March 2016

At the outset I wish to extend my regrets for not being able to bring out the last issue of the year gone by. Since its inception – rather renewal – two issues of the Newsletter have been missed – one in 2014 and one again in 2015. It is hoped that 2016 shall have all the four issues. This can be possible only with the cooperation of one and all from TOSKAR.

It is needless to say how enthusiastically TOSKAR members publish photographs of the orchids they grow so much so both Google groups mail and WhatsApp are overloaded with exquisite photographs. How wonderful it would be if the same ardor is shown toward Newsletter too. Wishful thinking??? Hope not though.

Coming to the present issue, I wish to extend my sincere thanks to all the contributors for sending their write ups well ahead of the date of release and that too without any reminders. Both Ravee Bhat and I found the experience of having the material in hand well in advance so very encouraging and also stress-free. Thank you all immensely.

Dr Sastry very succinctly summarized the three groups of orchid hobbyists and from the knowledge he gained by being a connoisseur of species he shared valuable information for all those orchid lovers who wish to join the ranks of species growing hobbyists. His brief write up stands as a reference point for anyone who have collected species from their natural habitat and wish to give them a comfortable home within their premises.

Nalini Kottolli's write up on the growing media though brief is very useful for beginners as they choose the potting media. The few words she mentioned on the often used clay balls are worth noting.

Similarly Gayatri Rao's short article on her own experiences is very informative and is a must-read for every new member of TOSKAR. Her advice to the newbies to restrict themselves to a couple of oft-grown hybrids is well worth remembering.

Both the above are written with a very personal fervor making the reading very interesting.

So also Sriram Kumar's short note on Spider Mites is informative and educative.

Newsletter hopes to continue to include tidbits as in Dr Sastry's brief on the very rare Slipper orchid *Paph. sanderianum* whose petals grow to a luxurious three feet each. He further enlightens us about the very recent discovery of a hitherto unknown species of *Encyclia*.

Sriram Kumar's beautifully illustrated "New Initiatives" is a very welcome addition to the Bi-monthly activities and certainly would encourage better displays during every Bi-monthly meets.

As always Dr Hegde comes up with an erudite contribution, this time on conserving orchids. Kudos to his yeomen service to orchids and environment of Arunachal Pradesh.

So also his sharing with us all about the National Conference cum Workshop on Orchids in Andhra Pradesh raises our hopes for the future of orchid growing in the Subcontinent.

Sad indeed that our newly elected Vice President Shri Keshav Murthy succumbed to injuries sustained in a road accident. It reminds us how transient life is. One moment is all it takes to be gone forever. And in the demise of our Founder Secretary Dr C.B. Jagannatha Rao we are reminded of the wise sayings of our sage Sri Ramakrishna Parmahansa that “Life always implies the inevitable.”

We all must all go one day. Let us make the most of the time we have in a very positive manner.

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EXPERIENCE SHARING OF GROWING ORCHID SPECIES IN BANGALORE

Dr K. S. Shashidhar

Most of us have started growing orchids for the sheer attraction and intriguing beauty of the flower. With the passage of time we got so 'addicted' to these mind blowing plants that we became 'accumulators' of these plants whether it is a hybrid or one of those 'not so easy to grow' species rather than 'growers' or hobbyists. I do not know how many I have accumulated over three decades and how many have vanished in thin air. Nothing like 'Hands on Experience' of growing and in the process sorry to say that we have killed many orchids (at least I have!) with or without knowing its fine tuning culture and care. Growers became 'wiser' after not only losing plants (indeed they are expensive!) but also time and money. With this experience, some of us decided that the hybrids are relatively easy and can be grown successfully rather than go on accumulating everything we come across, but still the temptation is too much to overcome when you see another species or hybrid in bloom! Such is the addiction!!!

Having said this, as I have observed, generally there are three groups of orchid hobbyists (may be more!), one who enjoy growing hybrids exclusively of different kinds as they want flowers all through the year. Most of the hybrids of Dendrobiums, Phalaenopsis, Oncidiums, Cattleyas, Vandas which are successfully grown in Bangalore conditions flower throughout the year. Under proper care each bloom will last for 2-3 months. Unfortunately, we do not get the latest hybrids even if one wants to buy, mostly the hybrids we get in Bangalore market or imported elsewhere in to the country and thus are relatively old ones (though they are good). Although as many as 104 new Dendrobium hybrids are registered between July and September 2015 one is not sure whether we get any of them in the near future. Besides this, numerous new hybrids of Cattleyas, Cymbidiums, Phalaenopsis, Paphiopedilums, and Vandas are registered every year. There are many unregistered crosses available in the market and even getting them here is also not easy. Some of the best nobile Dendrobium hybrids are produced from M/s Yamamoto orchids in Hawaii. Even in the cut flower market, there are latest cut flower hybrids which should be made available to Indian growers. It is important that whether you are growing hybrids or species, availability of good and healthy plants is key to successful growing.

The second group of hobbyists is connoisseurs of species; they go to any extent to procure the species. Even here many of us face the same problem of availability of plants. There are no nurseries which propagate and sell the Indian species and they are mostly collected from wild. Even if there are nurseries, they vegetatively propagate by division or cuttings. Hardly anybody will go for seed culture or tissue culture of these species, whereas, several Indian species which share the natural habitat with SE Asia, are cultured and are sold in flasks. Hobbyists who grow only species are more into collection and many of them are avid collectors. They are possessive and even if they have spare plants of a particular species they do not like to share them.

The third group of hobbyists belong to the category where they go for hybrids as well as some species. Species attract them but hybrids entice them into growing. They always try to balance between the two categories. This is not easy as the requirements are different in many ways. But most of the beginners fall under this category as they will not be able to decide for what they have to go (either of the first two categories) and end up having a mixture of the plants.



Dendrobium ovatum (L.) Kraenzl. - This Western Ghats species also responds a brief dry spell

Let us talk about the species growing as I mainly grow species and want to share my experiences with the other growers (I have few hybrids as I cannot resist! and also many of them can be used as parent material for breeding). In fact, when some interested people want to visit I inform them in advance that there may be only very few flowers depending on the season of flowering, so not to be disappointed.

The first and foremost thing about growing species is where you are growing – Region. We will be discussing about Bangalore. Once you have decided about the location then all the parameters like Light, Temperature, Humidity, Aeration, rainfall is known to you along with calendar of different seasons. What could be the maximum temperature during summer and what it would be in winter though there have been variations in the seasons and the range of temperature of late. Once the climatic parameters are known then the choice or selection of species becomes much easier. As we all know that there is a cool growing, intermediate, and warm growing orchids. To begin with, it is better to choose the species which does better for your region or location rather than going in for those which may need special additional requirements. May be at a later stage when enough experience is gained, one may venture into those species which are challenging to grow in your region. I would give examples of two genera here, *Cymbidium* and *Coelogyne* as most of us grow these here in Bangalore. *Cymbidium* has range of species whose requirements vary from cool to intermediate to warm. *Cymbidium tigrinum* is a lovely species which needs dry winter and cool nights to bloom. In Bangalore though we can provide dry conditions, but cool

nights are difficult as temperatures rarely go below 15° C and even if it goes it is only for a few days. Now come to *Cymbidium aloifolium* or *Cymbidium bicolor*, there is no problem with these two species and one can grow and get blooms without much efforts. Similarly, we can grow species like *Coelogyne rucchissini*, *C. pandurata* without much difficulties but, at the same time species like *Coelogyne nitida* and *Coelogyne nervosa* (from W. ghats) need relatively cool conditions for flowering. The point I am making here is get the prior information on the species care and culture before you buy or exchange and check whether it suits Bangalore growing conditions or whether you can simulate its fine requirements. As far as culture of hybrids are concerned, partly they also need conditions of their parents.

If one wants to grow species, the basic requirement is to get the firsthand knowledge about its growing conditions in its natural habitat. This will help us to replicate or provide near to these conditions in our culture. This not only goes for the species and even for the hybrids produced from the parents of these species. Classic case being the requirements of North east Dendrobiums. They need specific conditions to prime them into blooming such as diurnal variation in temperature, spell of dry conditions, no fertilizers. Unless these are provided, there will not be any blooms. Especially species like *Dendrobium nobile* which without subjecting to cool nights and dry spell, they may not flower for years together. There may be few flowers here and there but to make them bloom as they do in its natural habitat is the real art of culture of these species, though challenging, I am sure an enjoyable one.



Dendrobium polyanthum Wall. ex Lindl. - This NE species responds to its winter special care of a dry spell by producing beautiful blooms



Cymbidium Golden Elf- HTC, can be grown well in Bangalore conditions

After you have decided on the species for your location, then the most important aspect is to give sufficient time for it to acclimatize to your growing conditions. Generally, species are procured either from collection in wild (and many vendors also do this!!!) or from propagation through vegetative or seed culture or tissue culture. Species growing in wild in their natural environs and collected from their natural growing conditions and brought to an entirely different growing conditions will result in a setback for its successful culture. As these plants often need time to acclimatize and one has to be patient to give them time to get used to the new growing conditions. During this period frequent change of places and also change of media and repotting is definitely detested by the plant. Once you know the conditions for its growth, locate the plant in an ideal place and WAIT. *Patience here is a virtue for a hobbyist who wants to grow species.* If you are impatient and are in a hurry to get blooms like magic, then you may not be a candidate for species growing.

Orchids are almost like human beings; they dislike very much what they don't want to. For example, Dendrobiums dislike frequent repotting and disturbance to its root system. On the contrary, Paphs like to be repotted every year and they grow with vigor. If an orchid is doing well in a particular location in your green house or terrace or balcony or front yard never change its place. By doing well I meant putting out good vegetative growth, lots of roots and flowering regularly.



Arundina graminifolia dwarf, it is grown like any house plant and took two seasons to adjust before it started flowering



D. lindleyi Steud. - This NE *Dendrobium* species took two seasons before it settled down and flowered in Bangalore conditions

Providing the required light in terms of quantity and quality is the key to orchid flowering. In our growing conditions the main constraint has been space. To provide proper light conditions sometimes is challenging with the adjacent buildings casting shadows. However, if one is growing on a terrace much of the problem of low light is overcome. However, you may have the problem of excess light and this is also not desirable as excess light makes the plants grow stunted with yellow foliage and lack of chlorophyll may eventually cause irreversible damage to the plant.

I have been mentioning the importance of observing your plants as they grow. We may be watering the plants regularly and fertilizing too, but still keep a day in the week for observing the plants for any new growth, new buds emerging and then some onset of disease or an insect attack. If you have bought a new plant and after you either mount or pot them, within a span of 15-20 days new roots have to emerge. This is the first indication of your plant trying to settle down in the new environment. Especially in Bangalore conditions when it is arid, it is ideal for multiplication of scale insects and false spider mites. In 2015, I was away in the US for more than three months and summer was on, the humidity has gone down and the temperature was high in the Green House as a result some of my Paphs were severely damaged by false spider mites as these have the ability to multiply fast. Also these spider mites develop resistance to one type of miticide; therefore it is advisable to alternate with two different miticides to get rid of these pests. These problems which result in losing an expensive plant can be avoided by observing your plants regularly. Especially if you have one too many plants in a small area (like how I have!!) observation is MANDATORY. Sometimes I do not even recollect where I have placed a particular species which in my opinion is bad.



Coelogyne breviscapa Lindl. - A high elevation cool growing orchid, but given proper conditions it flowers in Bangalore conditions

As far as my species growing is concerned, I try to do things meticulously and as I mentioned space has been the constraint. As I photograph all the flowering ones, the flowering dates are known over a period of time. I suggest here, the moment you get a plant from the nursery do two things, one is label it again and with the date of potting, this gives you an idea how much time it takes to settle down. Many of my orchid species which I bought and which are flowering now have taken between one and a half years to two years to acclimatize to my green house. It may be different with hybrids and also with other species, but IT TAKES TIME to settle down. *Dendrobium aggregatum* which I bought one and half year ago, had not moved one inch, no new growth no new pseudobulb and did not flower last year, but this year it puts out two beautiful hanging inflorescences (of course, I subjected them to dry spell as per the requirement), now I have to observe for new growth and provide lots of water and nutrition. Many species (both Indian and native of other countries) will take about one and half years to two years to settle down and produce flowers provided, the conditions are ideal. Species like *Holcoglossum amesianum*, *Coryanthes maculata* and *Acriopsis javanica* all are in bud stage after one and half years. During this period, they remain in the same location and the containers in which they were potted initially. I have not done any repotting.

Mounted orchids generally do well as there is no fear of excess watering, but in Bangalore conditions one has to water literally every day during summer. Potted ones also do well here and one has to be careful with watering. Especially for Oncidiums as they like to be slightly on the drier side which is good as any excess water, the roots will start rotting. I have prepared a ready reckoner for most of my Dendrobiums as to its culture during winter and also over a period of time (2011-2016) the flowering pattern of many of my species. This will give an idea about the species flowering in Bangalore and also in case of delay (which is utmost about a month on either side) I can check and at least take action not to lose the plant.

There is plenty to share and will look forward to any suggestions and comments on these.

HAPPY ORCHID GROWING!

MEDIA FOR GROWING ORCHIDS

Ms Nalini Kottolli

The caller pressed the doorbell impatiently as I did not attend immediately. I rushed to the door, my Aunty had come. Where were you? She gasped. On the terrace, repotting the plants I said. She walked in and saw the orchid plants displayed on the window sill. What is this? Charcoal? Yes, was my reply. Oh! No! You can't keep this here she grumbled. Why so? It is not auspicious to keep charcoal in the front, remove it from here and keep it at the back, she ordered. As I do not believe in such notions I did not respond. But she reminded me while departing.

Healthy roots are absolutely necessary to have healthy plants. Without a substrate – a growing medium conducive to root establishment and growth, an orchid cannot absorb the nutrients and water it requires. What are the priorities of a suitable growing medium? It should be firm yet well aerated. With these two qualities a medium can offer a base to which roots can attach themselves, while at the same time allowing for aeration.

Generally we use charcoal and brickbats/pot pieces as they are cheap and easily available. Being inert, they are very suitable. By compacting with different sized pieces it can provide a good base for the plant. But it cannot hold moisture so the plant needs frequent watering. Besides this fir bark, tree fern, peat moss, perlite, hydroton clay balls, lava rocks, diatomite mud are also used. We shall presently check how good they are.

Coconut husk chips are also used with charcoal to provide moisture. These decompose fairly quickly and need repotting often.

Fir bark is used in western countries extensively, as it is widely available. It has to be soaked, till it becomes spongy. It holds water and absorbs fertilizer and encourages good growth. It decomposes in 2-3 years, calling for not as frequent repotting. Locally it is not freely available. Imported ones are expensive.

Tree fern slabs are good for mounting epiphytes. These however, are banned as the Tree ferns are being exploited indiscriminately, plus these have to be obtained from Northeast India. Tree fern can be replaced with old wood pieces, like Mango tree, Bottle brush tree cuttings, or any rough barked cuttings. Dendrobium species grows well on wood pieces.

Sphagnum moss can be mixed with charcoal as potting media, which retains moisture to keep the plants happy. Its sale is also officially banned. However in Bengaluru is still available. Now a days sphagnum moss balls called kokedum are used to grow orchids. The moss ball is used to plant the orchid and it is hung to provide aeration and allowed to dry between watering.

Coarse perlite is mixed with charcoal, which expands and retains water. Again good graded ones are difficult to get in Bangalore.

Hydroton – baked earthen balls are used as a media, generally in hydroponic method of growing. It can be mixed with charcoal and used. It helps the roots to cling to the balls and retain moisture. In the U.S. hydroton is giving way to growstones. Growstones are the glass pieces which are converted to different sized porous pieces.

Lava rocks are light lava rock pieces, imported for growing Paphiopedilums.

In the U.S. high silica growing medium called Diatomite is used. It holds up 150% of its weight in water. It is sterile, inert, pH neutral, 100% natural and reusable. It can be used with charcoal. Unfortunately it is not available in India.

These are some of the growing media used. Selection depends on the type of orchid, place of growing, availability and affordability.

New Species Discovered

In Mexico, Dr. Carlos Leopardi – Verde and his colleagues from the Universidad de Colima have discovered a new *Encyclia* species – *Encyclia inopinata* from the deciduous forests in the Mexican state of Oaxaca. More appropriately the species is named as *Encyclia inopinata*, in Latin *inopinatus*, means unexpected, which is referring to the surprise at seeing the new species in bloom. The flower colour varies from bronze green with dark purple lines near the base. The flowering season is from March – July. The species appears to be rare. - Dr K. S. Shashidhar

BEGINNERS' LUCK

Ms Gayatri Rao

A few years ago I was afflicted with a fever. I learned later that it affects some people more than others, but because the symptoms vary from person to person, from inability to concentrate, neglect of normal daily chores, insomnia and even obsessive compulsive disorder, diagnosis can be difficult. Some call it OFS – Orchid Fever Syndrome.

“Many collectors died in process of searching for new species, and despite persistent reports that the men died from drowning, gunshot and knife wounds, snakebite, trampling by cattle, or blows in the head with blunt instruments, it is generally accepted that in each case the primary cause of death was orchid fever.”

— *Eric Hansen, Orchid Fever: A Horticultural Tale of Love, Lust, and Lunacy*

So far I'm still hale and hearty. Hopefully, I won't ever die of it, even if I spend the rest of my life indulging in this obsession!!

However, I *“don't want to give the impression that perfectly normal, healthy, thoughtful, and balanced people are not drawn to orchids. I am told they exist. I just didn't have much luck finding them”*

— *Eric Hansen, Orchid Fever: A Horticultural Tale of Love, Lust, and Lunacy*

Having been an avid gardener, my foray into orchids started on one of my usual visits to Lal Bagh for the Independence Day Flower Show when I signed a TOSKAR membership form. That's how it all began.

Those days orchids were not very popular, and plants were hard to come by. I started with a couple of Phalaenopsis and Oncidiums. Common varieties perhaps, but they turned out to be the beginning of a love affair that has only grown more intense with the passing years! Call it beginner's luck if you will. I had the most amazing blooms in the first few years, with minimal effort on my part.

Phalaenopsis (pronounced *Fal-en-OP-sis* from Greek meaning Moth-like) orchids come in a wide range of colours and have wonderful glossy foliage and long lasting blooms. They require low light conditions, harsh direct sunlight will burn the leaves. One hears that the colour of the leaf is an indication of whether the plant is getting enough light, but I have observed that the leaves tend to be lighter or darker green depending on the colour of the blooms, so I'm not sure this is a good way to judge whether the plant is getting the right amount of light. Since the plant usually puts out only one pair of leaves each season, one cannot afford to sacrifice a single leaf. So care must be taken to give them favourable light conditions while keeping them out of the sun.

They require a well-drained medium which will prevent the roots from getting soggy and rotting, plus they do well in the special Phalaenopsis pots that are readily available at orchid nurseries. Watering depends on the water retention capacity of the media you are growing them in. While plants grown in pine bark will require more frequent watering, those grown in coco-chips will need to be watered less often. Watering frequency also depends on the season, but generally as a rule, one should water when the growing medium feels like it is drying out. If you are in doubt, wait a day! And take care to see that water doesn't remain in the crown, as this will result in crown rot. Try and water as early as possible in the day, so it has the rest of the day to dry off. You can also place your Phals in a pebble tray with water, to maintain some humidity.



Fertilise once a week with a balanced NPK fertiliser, for example 19-19-19. Be sure to follow this up every once in a while by flushing out the media of accumulated fertiliser salts with plain water.

Stake the flower spikes as they grow, taking care to be extremely gentle with the tender stems. Once the flowers have faded, cutting down the spike two nodes above the base often encourages a new spike to sprout. This is how Phals reward you with the most beautiful blooms for several months in the year.

Use a soft sponge to wipe your Phalaenopsis leaves clean of salt deposits with a solution of one tablespoon of household vinegar in four cups of water. Then wipe again with plain water, not allowing the vinegar to dry on the leaves. This not only keeps the leaves looking shiny and glossy, but also helps the plant to get more exposure to light thereby improving photosynthesis, adding to the general health of the plant.

Sometimes you may see a little plant growing off a mature flower stem. These are called keikis. Once the roots on this baby plant have grown a couple of inches, you can separate it from the mother plant by cutting the stem an inch or two below the new plant growth and re-pot it along with the mother plant. If you do not separate the keiki, it will continue to grow and bloom along with the mother plant, giving you additional bloom spikes the next flowering season.

Oncidiums (pronounced as *on-SID-ee-um* from Greek meaning pad on the flower lip) like bright light conditions and do well even with direct morning light.



Their fine roots prefer a smaller well drained medium and the pseudobulbs have a tendency to rot if overwatered. A wrinkled pseudobulb indicates insufficient watering, smooth, plump pseudobulbs signal a healthy plant. Water judiciously, allowing the medium to dry out between watering, so as to avoid rotting pseudobulbs.

Fertilise once every couple of weeks with a balanced NPK fertiliser, and flush out the medium with clear water at least once a month.

Flowers bloom on long spikes, depending on the specific variety, they can grow up to two to four feet long with dozens of blossoms on each spike, lasting for up to two months.

Over the years my collection has grown and diversified; as a result the time, attention and effort they require has increased incrementally. I've learnt by reading and listening, but mostly by trial and error. One thing I did learn was to limit the varieties to those you can provide the ideal conditions for. Different varieties of orchids need different growing conditions, potting media, watering and fertilising regimens. If you are a beginner you should start with one or two varieties, as you begin to learn and gain expertise, and begin to sample the fruits of your labour, you can slowly add new varieties to your collection.

Paphiopedilum sanderianum

Paphiopedilum sanderianum (Rchb.f.) Stein is one of the most rare species found in the North Western Borneo (Gunung Mulu). This is also one of the most sought after slipper orchid in the world. This was first discovered by F. Sander's collector, J. Foerstermann in the year 1885. The orchid is remarkable and exceptional with its wavy, drooping petals reaching almost three feet in length. The species was first discovered in the Sarawak rain forests then it was thought to have become extinct as many of the growers did not know where it grew in wild. Searching for these orchids not only involved money and time but at times risk of life. As a result, it was almost thought to be extinct. Until 1978 when Ivan Nelsen 'rediscovered' it near Fire Mountain while in bloom. The wild populations of the species grow in Gunung Mulu National park. Though numerous hybrids have been produced with this species as parent, none of them had the lateral petals as long as the species. Dr K. S. Shashidhar

PEST OF THE SEASON– SPIDER MITES

Mr Sriram Kumar

Background & Symptoms

One of the most serious pests of cultivated orchids are Mites. Mites are microscopic creatures related to spiders and ticks. Due to their small size, they mostly go unnoticed till the scale of damage is high.

There are two types of mites: Spider Mites and False Spider Mites.

In this article we are covering the former: Spider Mites.

Damage done by mites is permanent and irreversible

All stages of the mite feed on the leaves by piercing the cells on the underside of the leaves causing the cells to die and producing a speckled effect. Foliage look silvery from underside and yellow speckles/spots from the top.

Mites can severely weaken the plants by robbing the leaves of chlorophyll.

Some orchid genera are more prone to mite infestation than others. Commonly affected orchids are:

- Catasetum
- Cymbidium
- Grammatophyllum
- Phalaenopsis
- Thunia

Peak Season of Activity

Mites thrive in seasons of low humidity and peak activity is during Feb-Apr in Bangalore

- a) An easy way to confirm mite damage is to wipe the leaves with a cotton ball dipped in surgical spirit and observe for streaks of red/brown streak marks on them.
- b) Use a hand held magnifying glass to focus and see the underside of the leaves. You should be able to see mites and their webs.

Life cycle

Life cycle of mites is around 3-6 weeks and they multiply rapidly. High infestation would require frequent treatment to cover entire stages of life cycle



Spider mites example

Methods of Control

Insecticides are ineffective to control mites as they are not insects.

If the infestation is moderate, the first line of defense is to increase the humidity in the growing area.

Wash the leaves with a jet of water (especially on the underside of the leaves).

Spray the underside of the infested leaves with Neem oil (add a few drops of liquid soap to the neem oil mixed in water). This would help control the population of mites.

Neem oil has a tendency to burn the leaves if used on days when the temperatures exceed 33 Degrees Celsius. Best time to spray neem oil is during the early hours and then to keep the sprayed plants away from direct sun for a day or two.

If the infestation is high:

- 1) Spraying a solution of warm water + alcohol (Spirit/Vodka/Gin) @10-15% concentration would help.
- 2) Use of a commercial Acaricide/Miticide (Borneo, Omite) at recommended rates and frequency.

Mites are also known to transmit viruses

Notes on usage of chemicals

Avoid prophylactic use of Miticide as mites would build resistance quickly. Any chemical should not be used more than 2-3 times per year.

Follow the instructions on dosage and do not exceed recommended quantity.

Do not mix other chemicals or fertilizers with Miticides unless compatibility is mentioned in the instruction leaflet.

Do not use expired medicines.

Be considerate to the surrounding environment while using chemicals and disposing the containers.

Final Words

- Monitor your orchids regularly
- Practice prevention by creating non conducive environment for the pest
- Use good sanitation practices
- Use fungicides and insecticides only when needed

NEW INITIATIVES

Mr Sriram Kumar

Award of Ribbon & Merit Certificate For The Best Display Of Orchids At BMM

To recognize and reward the members for the best orchids raised by them and for displaying at the Bi-Monthly Meetings thereby encouraging members and their orchid loving guests.

The following guidelines have been framed:

1. Entries are free and open to members of The Orchid Society of Karnataka only.
2. Plants must be benched before the start of the Bimonthly meeting. Late entries are liable to be rejected
3. All plants must be in show bench condition, free from pests and diseases, clearly labelled (species level or Hybrid) and preferably owned for a minimum of six months. Responsibility for correct labelling of plants rests with the exhibitor and plants without labels will not be accepted for benching.
4. Staking Rules – tying of inflorescence may be made up to but not above the pedicel or ovary.
5. A flower or flowers missing from an inflorescence will disqualify the entry. However, the missing flower/ flowers is tabled in the pot with the plant. Plants, which flower progressively, may have flowers missing.
6. A pollinated, dead or dying flower/ flowers on a plant or inflorescence shall not disqualify that plant or inflorescence but shall detract from the merit of the plant.
7. A minimum of 50% of buds on an inflorescence must be fully opened before it is eligible to be judged unless the plant has the habit of progressively flowering.

Voting Procedure

- a) Each member will be given a sticker.
- b) After thoroughly scrutinizing all orchids in display he/she puts the sticker against the orchid he/she likes the best and considers suitable for an award.
- c) Once all members finish voting, total is tallied and orchids with maximum votes are awarded 1st, 2nd and 3rd place merit certificates
- d) At the end of the calendar year, consistent performer gets an award as the best grower.

Following are the photographs of all orchids displayed at the Bi-monthly meeting held on March 5th, 2016 at the Dr Marigowda hall in Lal Bagh, Bengaluru along with the best three.

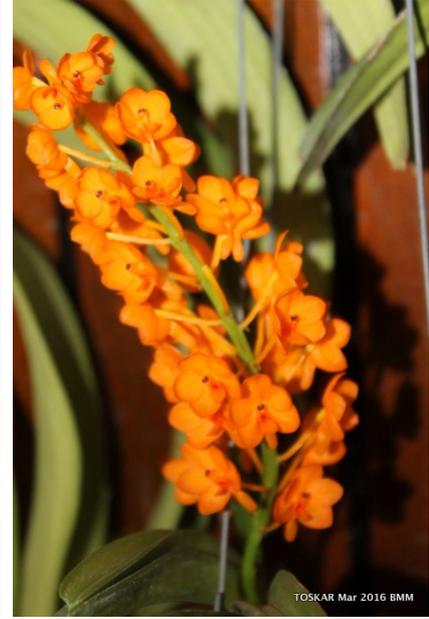
Members Display



V. lamellata var. *boxallii*
Rchb.f.
Dr. Shashidhar



D. Caesar hybrid
Ms Everest



Vanda garayi (Christenson)
L.M.Gardiner
Ramkumar



D. lindleyi Steud.
Dr. Shashidhar



Phal. Equestris (Schauer)
Rchb.f.
Ramkumar



Phal. Lueddemanniana
Rchb.f.
Ramkumar



Paph. Venustum (Wall. ex Sims) Pfitzer
Anil Kuber



Vasco. Azure
Ramkumar



D. tortile Lindl.
Dr. Shashidhar



D. amethystoglossum Rchb.f.
Ramkumar



V.Fuches Sunshine x Dhongporn
Sashikala



Blc.David Sander Fireworks
Dr. Parvathi



Dendrobium anosmum Lindl.
Dr. Parvathi



V. Pureswax
Suresh Kalyanpur



Epc. Rene Marques
Nageshwar



Cattleya. NOID
Nageshwar



Phal. stuartiana hybrid
Nageshwar



Pinalia obesa (Lindl.) Kuntze
Dr. Shashidhar



D. nobile hybrid
Ramkumar



Dendrobium NOID hybrid
Ms Everest



Vanda PineRiver
Dr. Shashidhar



D. polyanthum Wall. ex
Lindl.
Dr. Shashidhar



Vanda NOID
Sriram



D. amethystoglossum Rchb.f.
Sriram



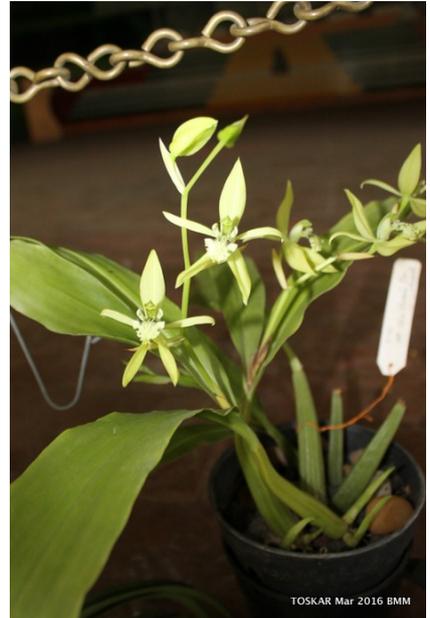
TOSKAR Mar 2016 BMM

Ansellia africana Lindl.
Sriram



TOSKAR Mar 2016 BMM

Onc. Calico Gem
Sriram



TOSKAR Mar 2016 BMM

Coelogyne pandurata Lindl.
Nalini



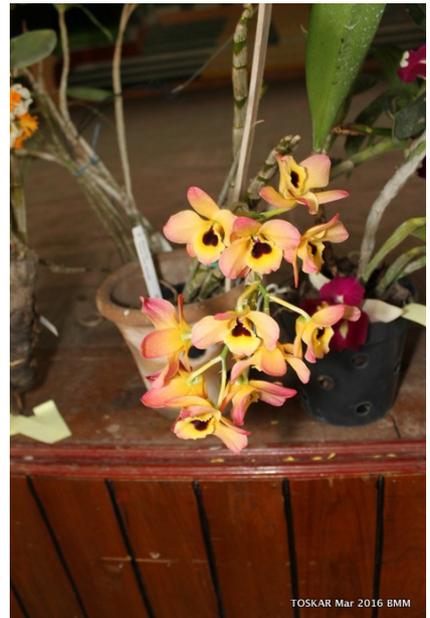
TOSKAR Mar 2016 BMM

V. lamellata Lindl.
Nalini



TOSKAR Mar 2016 BMM

Dendrobium hybrid NOID



TOSKAR Mar 2016 BMM

D. Oriental Smile Butterfly
Dr. Shashidhar



Tolumnia hybrids
Nageshwar



Paph. YiYing Twinkling Stars
Shyam Hebbar



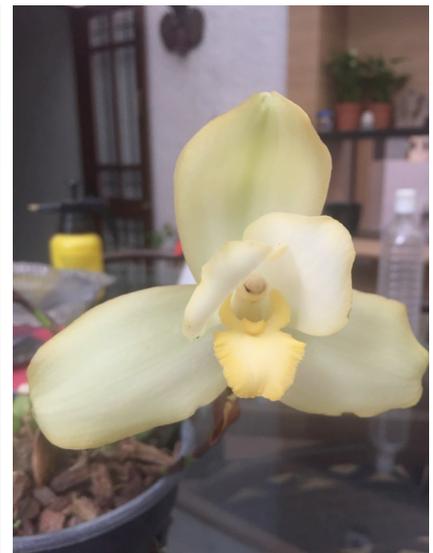
Paph. Temptation - Sriram



D. thyrsoflorum B.S. Williams
Dr. Shashidhar



D. bullenianum Rchb.f.
Dr. Shashidhar



Lycaste
Ramkumar

Most Voted Orchids



Dendrobium anosmum Lindl.

Dr. Parvathi

1st Place -10 votes



D. lindleyi Steud.

Dr. Shashidhar

2nd Place -7 Votes



D. thysiflorum B.S.Williams

Dr. Shashidhar

3rd Place -- 6 Votes

MY EFFORTS OF CONSERVING ORCHIDS IN ARUNACHAL PRADESH

Dr. Sadananda Hegde

In India, Arunachal Pradesh is one of the richest orchid habitats with about 614 species in 133 genera reported so far (Hegde, 1982, 2014, Rao 1986). It is a natural habitat for a vast number of ornamental as well as Rare, Endangered and Threatened (RET) species of orchids. Some of the important genera found in this State are *Acanthephippium*, *Aerides*, *Anoectochilus*, *Arachnis*, *Arundina*, *Bulbophyllum*, *Calanthe*, *Coelogyne*, *Cymbidium*, *Dendrobium*, *Diplomeris*, *Eria*, *Flickingeria*, *Gastrochylus*, *Goodyera*, *Habenaria*, *Kingidium*, *Liparis*, *Malaxis*, *Neogyne*, *Nervilia*, *Oberonia*, *Paphiopedilum*, *Phalaenopsis*, *Phaius*, *Pleione*, *Renanthera*, *Rhynchostylis*, *Satyrium*, *Spathoglottis*, *Thunia*, *Tropidia*, *Vanda*, *Zeuxine*, etc. Among them, four species of *Paphiopedilum* (popularly referred to as “Asiatic Slipper Orchids”) viz.: *Paphiopedilum fairrieanum* (Lindl.) Stein, *P. spicerianum* (Reichb.f.) Pfitz., *P. venustum* (Wall. Ex Sim) Pfitz., and *P. wardii* Summerh.; *Renanthera imschootiana* and *Vanda coerulea* are also considered as rare, endangered & threatened (RET) species and are protected under Wildlife Conservation Act. In this article, exploration and effort of conservation of large number of orchid species and RET species *in situ* & *ex situ* are presented.

Exploration

Arunachal Pradesh, the then North East Frontier Agency (NEFA) was less known until independence of our country. This territory was also known as “Hidden Land”, “Elusive Frontiers” and “Land of the Dawn-lit Mountains” mainly because of inaccessibility due to rugged terrain of rising hills from 100m to 7000m MSL, from tropical humid valleys to subtropical, temperate and snow-capped alpine hills, criss-crossed with several rivers and rivulets, with varying forest types rich in biological diversity – flora & fauna and of course the state receiving the first rays of the morning sun on our sacred land. When I first arrived in Arunachal Pradesh in 1978, my first task was to explore the rich flora dominated by orchids throughout the State and develop a strategy to conserve them both *in situ* and *ex situ* and then take Research & Development program to establish an orchid based floriculture through scientific intervention of breeding and tissue culture in a sustainable manner.

On the first day of my field trip on way to Bomdila, I was shocked to see several trees cut down for plantation activities at Sessa at an elevation of about 1100 m MSL. On one of the freshly cut trees, surprisingly, I could see several orchids on the fallen branches laden with mosses. Immediately I started collecting the orchids and was amazed to find as many as 21 species. My curiosity grew further and went on collecting in the surrounding areas. Within about two hours, I was able to collect forty species, most of them belonging to the epiphytic genera viz., *Bulbophyllum*, *Coelogyne*, *Cleisostoma*, *Dendrobium*, *Eria*, *Flickingeria*, *Gastrochilus*, *Liparis*, *Neogyne*, *Sunipia*, *Thunia*, *Vanda*, besides terrestrial species belonging to genera *Anoectochilus*, *Goodyera*, *Calanthe*, *Malaxis*, *Phaius*, *Spathoglottis* & *Spiranthis*. I was thrilled by my collection and brought them to my Centre; put them under cultivation in a lath house. Within a

fortnight, I visited that site twice and had some more collections. During these collection trips I could notice that the forest area was one of the virgin, wet, evergreen and primitive types with tall evergreen trees, with thickets of shrubs, herbs & climbers. The forest floor was covered with thick, spongy, humus soil nourishing plenty of leaches and small flies, locally called “dam-dim” that bite without your knowledge and any pain making you realise only when you start feeling a sort of itching with or without a swelling and blood oozing depending upon whether you are allergic to it or not. Luckily, I was not.

On that steep terrain of Kameng river valley, it was planned by the Department of Environment & Forests, Government of Arunachal Pradesh to raise pine wood plantation with Khasia & chir pine species. I thought it would harm the entire ecosystem and the pristine forest cover, destroying a rich orchid habitat. About five hectare area was already cleared for that purpose destroying thousands of orchids without knowing their importance and with an objective of developing a pine-bark & bamboo based paper industry to augment industrialization in the hitherto “hidden land”, Arunachal Pradesh. Of course, it was timber revenue also, the only source of income to the State.

Origin of Idea of Orchid Sanctuary

Having seen the loss of orchid germplasm and their natural home, I was feeling depressed for two-three days and then came up with an idea to get that entire forest area protected first by stopping the timber operation to save the orchids in their habitat. Secondly, work towards developing that area as an Orchid Sanctuary for conservation and proliferation of indigenous orchid species and thirdly, develop a Rehabilitation /Rescue Centres for orchids to save them from felled trees and developmental sites. I gathered the site specific information of Sessa forest area which falls in Doimara Forest Reserve of Khellong Forest Division in West Kameng District of Arunachal Pradesh; prepared a Project Report along with site map of about 85 hectare area with all the relevant information; met all the concerned authorities in the Department of Environment & Forests and also the Lieutenant Governor of Arunachal Pradesh (the then Union Territory) at Naharlagun, and apprised the matter to declare that area as “Sessa Orchid Sanctuary”.

As a good government, timber operation was stopped within a month. Meanwhile, I started exploring more areas within the Sessa Forest and adjacent area and several new additions/records and new species could be collected & identified besides ornamental species of *Cymbidium*, *Dendrobium*, *Coelogyne*, etc. distributed in various elevations and of course, *Paphiopedilum fairrieianum* found almost at the peak (3100m MSL) on a sloppy terrain facing the northern aspects of the Sessa mountain range. This substantiated my plea for declaring the entire Sessa Range as Orchid Sanctuary and I went on following up the matter with the government. Finally, 85 ha area was declared as the “Sessa Orchid Sanctuary” in 1979 for the purpose of orchid conservation, propagation and proliferation. With this, I started developing the cleared area of five Hectare into a Conservancy and introduced large number of species enriching the area

collecting from felled trees and developmental sites. A duplicate set was also brought under cultivation at Tipi Orchid Centre situated at the foot hills on the bank of Kameng River.

In the year 1980, the Lieutenant Governor of Arunachal Pradesh, Shri. R. N. Haldipur, paid a visit to Tipi & Sessa and was fascinated to see the beauty of orchids in bloom at Orchid Centre, Tipi and also at Sessa in their natural conditions. I took that opportunity to apprise him of the necessity to cover the entire Sessa mountain Range of about 100 Sq. Km., as Orchid Sanctuary under the provisions of the Wildlife Conservation (Protection) Act of Government of India for effectively conserve nearly 200 species of orchids found abundantly within the proposed Sanctuary. The revised notification with 100 Sq. km area of “Sessa Orchid Sanctuary” was issued in the year 1982. Since orchids are specialized in their habit, either as saprophyte, terrestrial or epiphyte and with varying habitat, requiring specific environmental requirements of light, humidity, temperature, pH of soil and host tree, mycorrhiza, phorophyte or specific host and other microclimatic conditions, besides the availability of pollinators, all care was taken to introduce them in appropriate locations in the Sanctuary for their growth & proliferation in as natural a manner as possible. Accordingly, the concept and procedure of maintenance of orchid flora as per their habitat requirement was prepared for guidance of the officers entrusted with the responsibility of maintaining the Sanctuary.



A view of Sessa Orchid Sanctuary in Arunachal Pradesh.

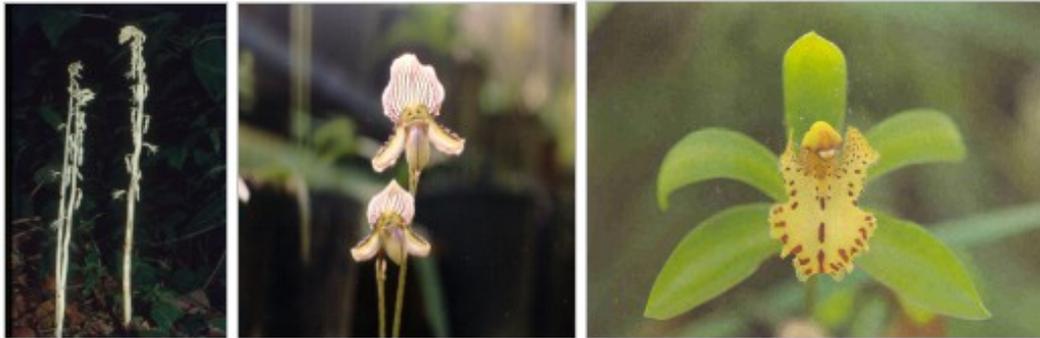
Subsequent survey and study of the area has yielded five new species viz. *Biermannia jainiana*, Hegde & Rao, *Cleisostoma tricallosum* Hegde & Rao, *Epipogium sessanum* Hegde & Rao, *Eria connata*, Joseph, Rao & Hegde, *Gastrodia arunachalensis*, Hegde & Rao, six saprophytes, 28 leafy terrestrials and about 140 epiphytic orchids in this sanctuary. It is significant to note that nearly 32% of sub-tropical orchids found in Arunachal Pradesh are found in this sanctuary; besides the presence of 15 endemic species of the Eastern Himalayas. Among them, *Bulbophyllum*, *Coelogyne*, *Cymbidium*, *Dendrobium* and *Eria* are dominant genera with maximum number of species. *Paphiopedilum fairrieanum* at the peak of the hills (2800 – 3100 m MSL) and *Paph. venustum* at the foothill ranges (250 – 1000 m MSL) of the Sanctuary find their habitat here which are under protected RET species.

This Sanctuary has become an inspiration to orchid researchers to study various aspects of orchid biology and attracting scientists across India and abroad. Late Dr. Salim Ali, the bird man of India appreciated this effort and concept of this Sanctuary devoted for *in situ* orchid conservation and proliferation under the provisions of Wildlife Conservation Act.

In order to conserve the orchids *ex situ*, occurring in various parts of the State, chains of Orchid Centres at various elevations and climatic conditions of Arunachal Pradesh have been established at Tipi, Dirang, Itanagar, Jenging, Roing and Deomali. About 300 species have been cultivated and propagated in these Centres as a measure of ex situ conservation and to create awareness among the local inhabitants on the importance of orchids and impart training in orchid cultivation as a supplemental crop.

Such efforts should be made by all the orchid rich States of our country to save orchids in their natural habitat for future generations and development of our orchid Industry.

Some orchids occurring in the Sessa Orchid Sanctuary



Epipogium sessanum

Paph. Fairrieianum

Cymbidium grandiflorum



Cymbidium iridioides

Dendrobium nobile.

NATIONAL CONFERENCE CUM WORKSHOP ON ORCHIDS – ANDHRA PRADESH

Dr Sadananda Hegde

The Orchid Society of India (TOSI) jointly with Dr. Y. S. R. University for Horticulture, Venkaramannagudem, West Godavari District, Andhra Pradesh organized a two-day National Conference cum Workshop on “**Advances in Orchid Biology with focus on Climate change, Medicinal & Floricultural Plants, and Sustainable Economic Utilization**” on 26th & 27th, February, 2016. About 100 delegates including eminent scientists/orchidologists, professionals, nursery men, entrepreneurs and farmers from 43 Institutions and 21 States & Union Territories of India and a few from Bangladesh participated and deliberated on the subject. Inaugurating the event, Dr. T. Janakiram, ADG, ICAR, New Delhi, called upon scientists to come out with a suitable package and practice for developing this important natural resource as a vibrant floriculture Industry. In order to promote the same, he informed that a “**Center of Excellence in Orchid Research & Development**” will be established at Dr. YSRUH to promote orchid based floriculture for tropical orchids. Prof.(Dr.) B. M. C. Reddy, Vice Chancellor of Dr.YSRHU, in his presidential address emphasized on good germplasm collection and production of hybrids to promote the orchid industry in India.

Dr. Paramjit Singh, Director, BSI, delivered the key note address highlighting the orchid diversity of India and its sustainable use in promoting pharmaceutical and floriculture Industry. Prof. A. K. Bhatnagar, President TOSI welcomed the dignitaries and delegates and Prof. P. Pathak, Secretary, TOSI, talked about the activities and achievements of The Orchid Society of India (TOSI) for the last 33 years in promoting orchids in India and gave a gist of the present Conference cum Workshop on Orchids. They also announced TOSI awards to eminent scientists for their outstanding contributions to Indian Orchidology.

The two-day Workshop dealt on various aspects of orchids, especially, orchid diversity assessment, taxonomy, conservation *in situ* & *ex situ* in the light of climate change, cultivation and propagation adopting biotechnological interventions, development of hybrid clones and climate specific crops with cultivation packages and practices, extension and training of farmers, growers and entrepreneurs both in rural and urban areas, development of market linkages and necessary infrastructure and investments to strengthen Orchid Industry in India so as to generate revenue and societal benefits. As a part of the conference and to encourage young scientists working on orchids, poster presentation was also organised and the best among them were awarded a prize and a certificate.

Besides the Conference & Workshop, there were Orchid Show, Drawing & Painting Competition for School children and Photography Competition on Orchids which attracted local people and created awareness on orchids. The best two among the competitors were awarded cash prizes and certificates.

Dr. Sadananda Hegde, President, TOSKAR participated in the Conference and presided over one of the Technical Sessions, “Orchid Diversity Assessment & Taxonomy” and delivered a talk on the topic “Commercial Potentials of Orchids in India and Societal Benefits”.

An Abstract of the talk is given below for the benefit of the members of TOSKAR.

COMMERCIAL POTENTIALS OF ORCHIDS IN INDIA AND SOCIETAL BENEFITS

ABSTRACT

Orchids have gained importance as one of the highly priced floricultural crops across the world. However, in spite of their rich natural occurrence and ideal agro climatic conditions in India, they have not been systematically developed and the people are yet to reap the benefit out of this natural resource.

In this paper, while tracing the history of orchid development in India briefly, distribution of some of the commercially important orchid genera – species and hybrids in various agro climatic conditions have been presented. Role of governments, non-government organizations and individuals in promoting the development of orchid industry in India has been discussed. Need for a coordinated effort in focused R & D program in developing new hybrid strains suiting to various agro climatic conditions of our country involving various Institutions of excellence in developing climate specific strains of temperate Cymbidiums and Paphiopedilums, tropical Dendrobiums and Vandas and intermediate Cattleyas and Phalaenopsis, besides other ornamental native species for both cut flowers and pot plants along with their cultivation practices and packages has been suggested. Besides, potentials of medicinally important orchids and their R & D program in boosting commercial production has also been suggested. A strong extension program of the technology and market driven approach to reach the stake holders, farmers and growers, in villages and Urban clusters involving the communities in promoting cultivation and production of the commercial orchids with a market driven approach has been proposed for the development of a vibrant Orchid industry. Involvement of corporate sector for the production of quality planting materials in large quantities, distribution to the growers/farmers in village and urban clusters and marketing of their products has been emphasized for the benefit of the society and to boost Orchid industry in India.

Orchid Show 2015 - A Photo Feature

Photos By Dr. Jambulingam



A view of show



Members Display - Cattleya section



Members Display - Phalaenopsis section



Members Display - Oncidiums



Members Display - Terrestrials



Members Display - Dendrobium section



Cattleyas



Another view of the show



A Dendrobium hybrid on display



Floral Arrangements



Paphiopedilums on Display by Members



More Dendrobiums

OBITUARY

DR. C. B. JAGANNATHA RAO
(03.11.1937 – 04.12.2015)

Dr. C. B. Jagannatha Rao was born on 3rd November, 1937 at Parlakimedi, Ganjam District of Orissa. He obtained B.Sc (Hons) in Botany from Erskine College of Natural Sciences, Waltair, Andhra in the year 1958 and obtained his Masters (1959- 60) from All India Sericultural Institute, Central Silk Board, Mysore. Subsequently, he moved to Japan and did his M.Sc. Agri and D.Sc. Agri. at the University of Tokyo, Japan (1964 – 69).

He had intensive training in Sericulture. Worked in various capacities in Bhubaneswar, New Delhi, Jammu & Kashmir, and Mysore with wide ranging experience. He had a stint in Manila, Japan, etc. He served in the United Nations as a Technical Officer of the FAO of the UN and posted at the Rehabilitation of the Refugees from Sudan at Camp M'boki, Central African Republic. From 1972 onwards up to 1991, he served in various capacities in various organizations of the world – UNO /UNIDO & UNDP/ILO/USAID etc.; in Thailand, Laos, Sri Lanka, Algeria, Tehran, Malaysia, Afghanistan, Pakistan, Bangladesh, Philippines, USA, Venezuela, Peru, Brazil, China, so on. Finally, after retirement, he joined Khoday Group of Companies, Bangalore, as Sr. Vice-President for Agro-Industries. During this tenure along with Mr. Radheshyam Khoday, Director Agro Industries, he conceived the idea of establishing the Orchid Society of Karnataka. He contacted Dr. Ananda Rao, was carrying out studies on Orchid Flora of Karnataka. His association and collaborations with Dr. Ananad Rao resulted in establishing TOSKAR in 2005 with Dr. Ananda Rao as the Founder President and himself as the Founder Secretary of TOSKAR

A year later he prepared the Bye-laws for TOSKAR along with Dr Sadanand Hegde. TOSKAR was registered in 2006. He toiled tirelessly for its development and functioning.

Dr. C. B. J. Rao, was a very pleasant mannered and sincere person. He was hard working seeking perfection and promptness in everything he undertook. He was a great scholar, an eloquent orator. He served the Orchid Society of Karnataka as Secretary and subsequently as Vice President and contributed immensely for achieving the objectives of the Society.

On 4th December, 2015 he breathed his last leaving behind his wife, only daughter and scores of admirers. Let us pray Almighty to give strength and fortitude to his bereaved family to bear the irreparable loss.

May his soul rest in peace.

- The Orchid Society of Karnataka (TOSKAR).

OBITUARY

Shri R. Keshava Murthy 1948 – 2016



It is with profound sorrow and grief we would like to inform all our members that Sri. R Keshava Murthy, Vice President of the society is no more. Mr. Keshava Murthy met with an accident on 11 Feb, 2016 and was admitted to BGS hospital and expired on 12 Feb, 2016. He has just been nominated as Vice President of the Society in the month of January, 2016, and was very keen on involving in the activities.

Mr. Keshava Murthy was born in Malur of Kolar District on 02.08.1948. He completed his earlier school education in Kolar district. Later he did his graduation in Commerce from KGF. He subsequently joined Karnataka Electricity Board (now BESCOM) in the year 1970 -71 as an accounts' personnel. He served in various capacities in different places in the state such as Mandya, Bangalore, Mangalore. Before superannuating as an Accounts Officer in the year 2008, he was working in the Head office in Cavery Bhavan, Bangalore. During his earlier days he was associated with Rotary International and was an active Rotarian.

For Keshava Murthy, retirement is just beginning of another innings. He engaged himself in various activities from gardening to being an office bearer (Treasurer) in Aam Aadmi Party unit of Rajajinagar, Bangalore. By then he has developed a keen interest in growing orchids. There afterwards there was no looking back and he was an avid orchid collector and grower. He used to travel a bit with his friends and during those times, he always used to bring some seeds or flowers (for ID) and then give it to me to raise seedlings. He had a good collection of both species and hybrids. In any Society's event, he was keen on displaying his flowering orchids and he somehow made sure that his plants were taken to the event and brought back safely. The last event of the Society he attended was on Tuesday 8 Feb, 2016 when we were all there at St. Joseph's College. He was there for the entire day with his plants for display.

His social contacts were very vast, he knew bureaucrats, business people and then he had equal number of friends sharing common interests such as growing orchids and involvement with AAP. He was popular among his friends and liked to visit them frequently. He was very meticulous in whatever he did.

In his absence, not only society lost a good member and an office bearer, but an orchid enthusiast and grower and above all a good human being. It is a loss for his friends and personally to me as I had known him for 40 years. While expressing deep condolences to the family members, we all pray to God to give enough courage and strength to the family to withstand the bereavement.

- Dr Shashidhar Sastry

