

## **LAL JI SINGH**

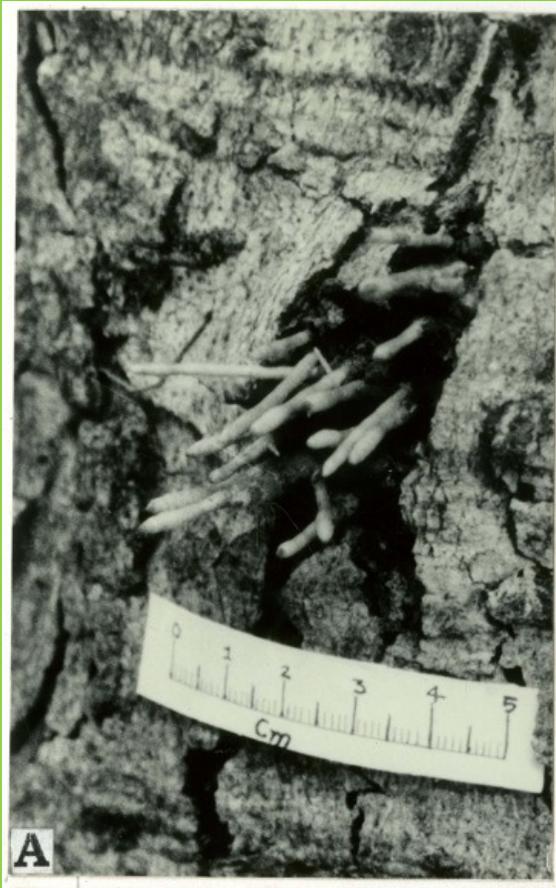
M.Sc., M.Ed., D.Phil., NET, FBS, FAPT, FASA

### **Academic Record:**

- **D. Phil from University of Allahabad, Allahabad, India (2002).**
- **CSIR- NET/SLET - (2000)**
- **M.Sc. Botany & M. Ed. from University of Allahabad, India (1992,1998).**
- **B.Sc. Botany, Chemistry, Zoology from University of Allahabad, India (1990)**

Email: [laljisinh1970@rediffmail.com](mailto:laljisinh1970@rediffmail.com)

**TITLE OF THESIS:**  
**STUDIES IN PLANT MORPHOLOGY : AERIAL AND TERRESTRIAL ROOTS OF SOME VASCULAR PLANTS.**



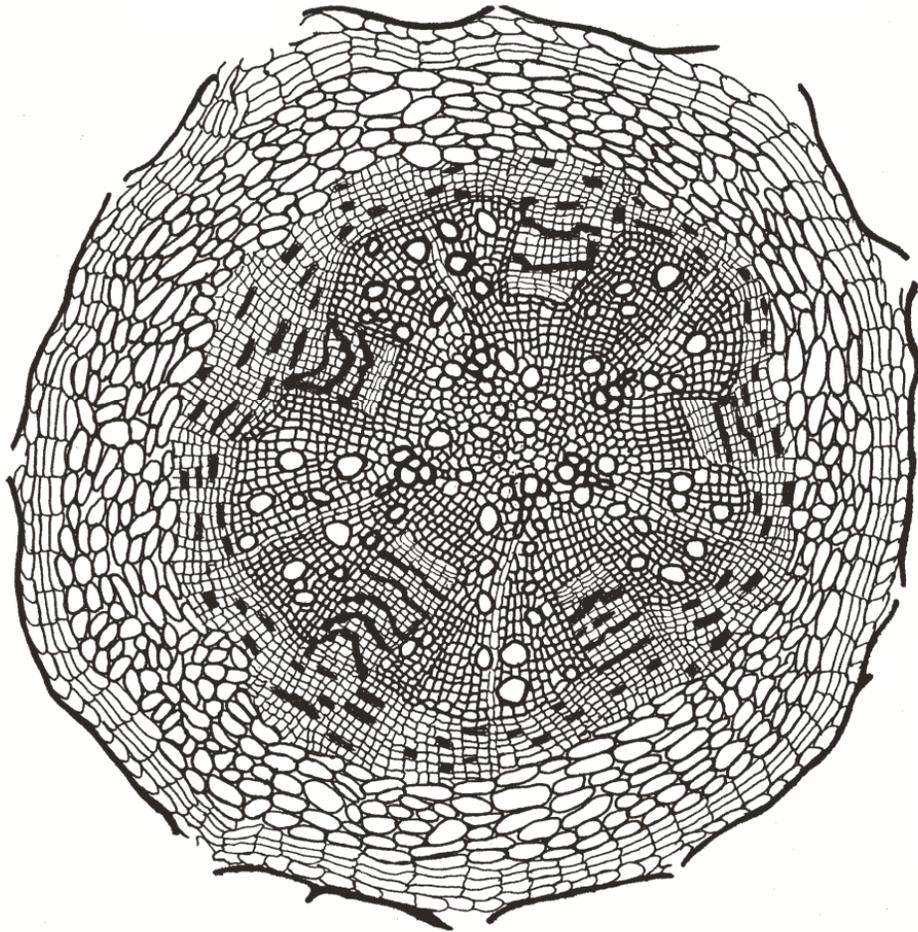
**Achievements**

**Occurrence of dimorphic roots (aerial and terrestrial) in various dicotyledonous taxa (13 species belonging to 9 genera) were reported and described for the first time.** However, the occurrence of aerial roots is considered as a characteristic feature of monocots (Gill and Tomlinson 1975).

Morpho-Anatomical Diversity of Roots of *Syzygium cumini* Skeels (Myrtaceae):

An Adaptive Strategy Under Stress Ecosystem was evaluated and described for the first time

**Occurrence of phloem wedges** in roots of some Bignoniaceous taxa were reported for the first time.



**Occurrence of Vessels** in some pteridophytic taxa were reported for the first time

Dobbins (1971) has stated that the Occurrence of 'phloem wedges' is considered as a characteristic anatomical feature of **bignoniaceous stems** and act as shock absorbers and also allow to the stem of lianas to bend during strong winds, as a solid xylem may not provide such flexibility. Formation of 'phloem wedges' is due to the abnormal activity of cambium formation of unidirectional cambial arcs near the major vascular bundles and all the leaves and bud traces are connected to these strands, have been shown to be source of growth substances which affects the cambial activity. But the reasons which are responsible for abnormal activity of cambium are not present here as roots do not bear leaves and buds.

Therefore, the study concludes that it may be due to its genetic feature.



**BOTANICAL SURVEY OF INDIA  
ANDAMAN AND NICOBAR REGIONAL CENTRE  
PORT BLAIR**

**Date of Joining in BSI : 10<sup>th</sup> May, 2010 (Scientist-‘C’, BSI,  
ANRC, Port Blair)**

**Present Designation -Scientist-‘D’,**

# BOTANICAL SURVEY OF INDIA,

## ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

- **Established** : **30-03-1972**
- **Jurisdiction** : **Andaman & Nicobar (*ca* 8249 sq. km.)**
- **Herbarium Acronym** : **PBL**
- **Explorations** : **251 exploration tours**
- **Accessioned Sheets** : **36418**
- **Type specimens** : **315**
- **New Genera** : **3**
- **New Species** : ***ca* 116**
- **Publications** : **7 books & 500 research articles**
- **Library holdings** : **5077 books & Journals**
- **Experimental Garden** : **Dhanikhari Exp. Garden-cum-Arboretum (DEGCA)  
( 30 Ha.) *ca* 600 spp.**

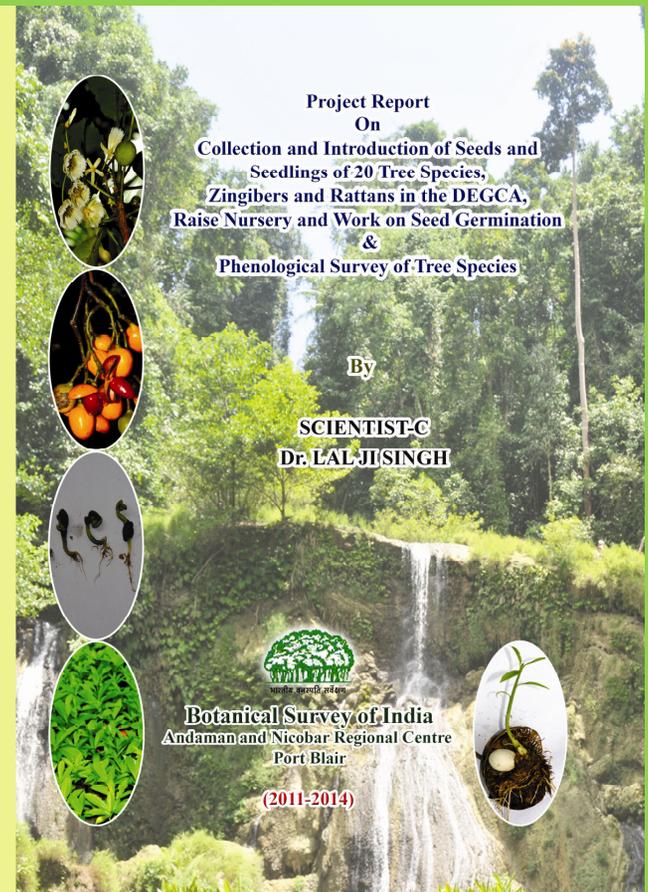
## Project Completed:

1. Ex-situ conservation : Collection and introduction of Seeds and seedlings of 20 trees species, zingbers & rattans in the Dhannikhari Exp. Garden-cum-Arboretum (DEGCA) to raise nursery and work on seed germination. (April 2011 to March 2014)- Detailed report was submitted on 30<sup>th</sup> April, 2014.

2. Phenological Survey of tree species of Dhanikhari Exp. Garden-cum-Arboretum (DEGCA), Nayashahar, South Andaman. (April, 2011 to March, 2014)

  
Botanical Survey of India  
Andaman and Nicobar Regional Centre  
Port Blair

  
PROJECT REPORT ON Collection and Introduction of Seeds and Seedlings of 20 Tree Species, Zingbers and Rattans in the DEGCA, Raise Nursery and Work on Seed Germination & Phenological Survey of Tree Species



## ON GOING PROJECT

### TITLE OF PROJECTS:

1. COLLECTION AND INTRODUCTION OF SEEDS AND SEEDLINGS OF 20 TREES SPECIES, ZINGBERS & RATTANS SEED GERMINATION STUDIES IN THE DHANIKARI EXP. GARDEN-CUM-ARBORETUM (DEGCA) AND WORK ON SEED GERMINATION (APRIL 2014 TO MARCH 2017)

**(Final Report is under preparation.)**

2. PHENOLOGICAL SURVEY OF TREE SPECIES OF DHANNIKHARI EXP. GARDEN-CUM-ARBORETUM (DEGCA), NAYASHAHAR, SOUTH ANDAMAN. (APRIL 2014 TO MARCH 2017)

**(Final Report is under preparation.)**

## ON GOING PROJECT

(APRIL 2014 TO MARCH 2017)

### 1. TITLE OF PROJECT:

COLLECTION AND INTRODUCTION OF SEEDS AND SEEDLINGS OF 20 TREES SPECIES, ZINGBERS & RATTANS IN THE DHANIKHARI EXP. GARDEN-CUM-ARBORETUM (DEGCA) AND WORK ON SEED GERMINATION **(Final Report is under preparation)**

### Achievements:

- **Seeds, seedlings, rhizomes of 60 species including RET species**, were collected from various Islands and introduced in the Dhanikhari Experimental Garden cum Arboretum as a part of Ex-situ conservation.
- Maintenance of the previous collections.
- During floristic exploration, plant survey and collection **several novelties & botanical curiosities have been discovered.**

# DHANIKHARI EXPERIMENTAL GARDEN CUM ARBORETUM, NAYASHAHAR



An excellent center for collection of plant species as well as *ex-situ* and *in-situ* conservation in the Andaman & Nicobar Islands

Dhanihari Experimental Garden cum Arboretum (DEGCA) attracts more than thousand visitors every year.

# Raised Nursery For Multiplication



Under ex-situ conservation



<b>Germination percentage</b>	<b>2-5 % (UC), 0% ( FCG), 0 % (LC)</b>
-------------------------------	--

Under canopy= UC, Forest canopy gap=FCG, Large clearing=LC

***Dillenia andamanica* C.E. Parkison**

## Under ex-situ conservation



<b>Germination percentage</b>	<b>00 % (UC), 20-38% (FCG), 10-15% (LC)</b>
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Under canopy= UC, Forest canopy gap=FCG, Large clearing=LC



Under ex-situ conservation

<b>Germination percentage</b>	<b>5-8 % (UC), 50-55% (FCG), 20-25 % (LC)</b>
-------------------------------	---

Under canopy= UC, Forest canopy gap=FCG, Large clearing=LC

*Mangifera andamanica* King



Under ex-situ conservation

<b>Germination percentage</b>	<b>55-60% (UC), 25-30% (FCG), 5-10%(LC)</b>
-------------------------------	---

Under canopy= UC, Forest canopy gap=FCG, Large clearing=LC

*Mangifera camptosperma* Pierre

Under ex-situ conservation

*Elaeocarpus ganitrus* Roxb.ex G.Don  
Elaeocarpaceae  
Planted By Smt. Novel Lavasa  
09.04.2016



***Musa indandamanensis* L.J.Singh**



**Under ex-situ conservation**



***Nymphaea omrana* Hort. Ex Gard.**



***Carissa andamanensis* L.J.Singh & Murugan**

Under ex-situ conservation

*Hornstedtia fenzlii* (Kurz) K.Schum.



Under ex-situ conservation



*Zingiber pseudosquarrosus* L. J. Singh & P. Singh



This new species has been discovered and described based on the **collection made from Sabari, Rangat, Middle Andaman, Andaman and Nicobar Islands, India.**

Under ex-situ conservation



*Luisia balakrishnanii* S. Mishra (Orchidaceae)  
-an endemic orchid

Under ex-situ conservation



*Diplazium proliferum* (Lam.) Thouars

Under ex-situ conservation



*Euphorbia epiphylloides* Kurz. Euphorbiaceae  
-an endemic species



*Euphorbia heterophylla* L.

**ON GOING PROJECT**

**(APRIL 2014 TO MARCH 2017)**

**2. TITLE OF PROJECT:  
PHENOLOGICAL SURVEY OF TREE SPECIES OF DHANIKHARI EXP.  
GARDEN-CUM-ARBORETUM (DEGCA), NAYASHAHAR, SOUTH ANDAMAN.**



- Recording of flowering and fruiting period of **73 tree species** which are established at the Dhanikari Experimental Garden-cum-Arboretum recorded.
- **(Final Report is under preparation)**

## FLORISTICS STUDIES

Besides ex-situ conservation I am also working on Floristics studies of some families :  
Cycadaceae, Loranthaceae, Musaceae and Zingiberaceae.

During floristic exploration, plant survey and collection: **several novelties & botanical curiosities have been discovered :**

### Since 2010 to till date:

- 06 New species
- 01 New Generic Record for India,
- 01 New Generic Record for Andaman and Nicobar Islands,
- 06 New Record for India,
- 06 new record for state flora
- Occurrence of Vivipary in non-mangrove plant

## **New to Science:**

### **Described and Illustrated following New Species: -06**

- *Carissa andamanensis* L.J.Singh & Murugan (Apocynaceae) *Indian Journal of Forestry* 2012, 35(4): 493-496.
- *Cycas pschannae* R. C. Srivast. & L.J.Singh *International Journal of Current Research in Biosciences and Plant Biology* 2(8): 35-37.
- *Macrosolen andamanensis* L. J. Singh *Indian Journal of Forestry* 2013, 36(1): 55-59.
- *Musa indandamanensis* L. J. Singh (Musaceae) *Taiwania* 2014, 59 (1): 26-36.
- *Scurrula paramjitii* L. J. Singh *Taiwania* 60(3):123–128
- *Zingiber pseudosquarrosus* L. J. Singh & P. Singh *Nordic Journal of Botany* 34: 423-426



**NEW TO SCIENCE**



*Zingiber pseudosquarrosus* L. J. Singh & P. Singh

**This new species has been discovered and described based on the collection made from Sabari, Rangat, Middle Andaman, Andaman and Nicobar Islands, India.**

# अण्डमान निकोबार द्वीप समाचार

010 पोर्ट ब्लेयर, बुधवार, 11 जनवरी 2017 web: www.ani

## वनस्पति सर्वेक्षण के वैज्ञानिक द्वारा अंडमान द्वीपसमूह से अदरक (जिन्जर) की नई जाति की खोज

पोर्ट ब्लेयर, 10 जनवरी

भारतीय वनस्पति सर्वेक्षण के वैज्ञानिक ने अदरक (जिन्जर) की नई जाति की खोज अंडमान द्वीपसमूह से की है। जिसका वैज्ञानिक नामकरण जिन्जीबर सूडोस्क्वोरसम के रूप में किया गया है। इन द्वीपों की अद्वितीय पादप सम्पदा न केवल भारत बल्कि सम्पूर्ण विश्व में अपनी विशिष्ट पहचान बनाए हुए जो की इन द्वीपों में पाई जाने वाली स्थानिक जातियों द्वारा प्रमाणित है। उप निदेशक एवं वैज्ञानिक, भारतीय वनस्पति सर्वेक्षण डॉ लाल जी सिंह ने बताया कि इन नई जाति की खोज विज्ञान जगत के लिए एक नई खोज है जो कि नार्थ एवं मिडिल अण्डमान के व्यापक और गहन सर्वेक्षणों का



परिणाम है। इस नई जाति (जिन्जीबर सूडोस्क्वोरसम) का वैज्ञानिक विश्लेषण एवं विस्तृत वर्णन 'इन्टरनेशनल बायोटैकनिकल जर्नल: नारडिक जनरल ऑफ बोटनी' में टेक्सोनोमिस्ट डॉ लाल जी सिंह एवं निदेशक भारतीय वनस्पति सर्वेक्षण डॉ परमजीत सिंह द्वारा किया गया है। यह नई जाति अब तक ज्ञात अन्य जिन्जीबर जातियों से भिन्न है। इसमें पाई जाने वाली ट्यूबरस जड़, लाल रंग का सूडोस्टेम, भूमित पुष्प छण्टल, सिन्दूरी लाल रंग एवं कमल के आकार वाले स्फुटित फूल, लाल रंग के बीज इसकी अपनी पहचान हैं। अदरक (जिन्जीबर) की लगभग 141 जातियाँ विश्व के विविध भौगोलिक क्षेत्रों ट्रापिकल एशिया, चीन, जापान एवं ट्रापिकल आस्ट्रेलिया में पायी जाती है, जिसमें से 20 जातियाँ भारत में और 07 जातियाँ इन द्वीपों में पायी जाती हैं।



MONDAY, JANUARY 9, 2017  
**THE HINDU**  
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ENVIRONMENT

## New Ginger species with medicinal properties found in Andamans



Scientific paper

A scientific paper providing details of the new species, authored by Mr. Singh and BSI director Paramjit Singh, was recently published in international botanical journal *Nordic Journal of Botany*.

Like other species of Gingers, this new species is edible and can be propagated vegetatively from the rhizome. The planted rhizomes were successfully vegetatively propagated at the BSI garden at Port Blair after transplantation.

Species belonging to genera Zingiber are monocotyledonous flowering plants whose rhizomes are widely used as a spice or a traditional medicine. Commonly used species of Zingiber (*Zingiber officinale*) known for its aromatic smell is cultivated widely across India.

### The fresh extract of tuberous roots is used to treat abdominal pain by tribals

Scientists of the Botanical Survey of India (BSI) have found a new species of Zingiber (commonly referred as Ginger) from the Andaman and Nicobar Islands. The species *Zingiber pseudoquarrosam*, new to science, belonging to genus Zingiber, was already used by the local Particularly Vulnerable Tribal Groups (PVTGs) of the Andamans for its medicinal values.

During an expedition to north and middle Andaman, one of local guides, who was a Nicobarese, shared his traditional knowledge about this species, which was so far hidden from science.

After collecting and systematically analysing the species, scientists found that the new species indeed possesses ethno-medicinal uses.

"The fresh extract [juice] of fleshy tuberous roots is used to treat abdominal pain and anti-helminthic troubles by Nicobarese and certain other tribal communities," Lal Ji Singh, taxonomist and one of the scientists behind the discovery, told *The Hindu*.

"This pseudo stem of the new species is predominantly red in colour. Flowers have a vermilion tinge and dehiscent fruit [fully mature fruits] are lotus shaped. Inflorescence buds are urceolate in shape. The species has got tuberous root," Mr. Singh said. The morphological features of this species makes it distinct from other species belonging to the genus Zingiber.

### 141 species

As per scientific information available, there are 141 species of genus Zingiber are distributed throughout tropical Asia, including China, Japan and tropical Australia. Of these, 20 are reported from India, which include seven (latest being *Zingiber pseudoquarrosam*) from Andaman and Nicobar Islands. Most of the species of these Gingers are endemic to India.

The tribes of the Andaman and Nicobar Islands have interesting usage of other species of Gingers. For instance, Shompen and Nicobari tribes use various plant parts of another species of Zingiber (*Hornstedtia fenlii*) as bee repellent and, tranquiliser. Rhizome extracts and leaf pest are applied on body during extracting honey from honeycomb.

## New Species of Zingiber discovered

**PORT BLAIR:** Scientists from the Botanical Survey of India (BSI), Ministry of Environment, Forest and Climate Change have found new species of *Zingiber* in Andaman Islands. The phytodiversity of Andaman and Nicobar Islands is one of the unique and richest not only in the country but also at global level with remarkable degree of genetic

variations because of this the new species are still continued to be discovered in these Islands. *Zingiberis* represented by 141 species and distributed throughout tropical Asia including China, Japan and tropical Australia. Of these, 20 species are reported from India and 7 species occur in the Andaman and Nicobar Islands including this new taxon. This was discovered

after undertaking extensive and intensive field explorations to North Andaman followed by critical studies. Indian taxonomist & Dy. Director BSI, Dr. Lal Ji Singh has taken at least nine exploration tours to various phytogeographical areas of Andaman Islands to discover *Zingiber* species (*Zingiberpseudosquarrosium*) as

See... Page... 02



### New Species of...

**New to Science.** Which have been published in International Botanical Journal: *Nordic Journal of Botany* 34: 421-42 and authored by Dr. Lal Ji Singh and director of BSI Dr. Paramjit Singh. Among the *Zingiber* species discovered, *Zingiberpseudosquarrosium*, differ from all other species of related genera by its morphology of vegetative and floral characters. This species can be distinguished by the presence of a small red coloured pseudostem, urceolate or prolate inflorescence bud, very long underground peduncle; orange red (vermillion) lotus shaped dehisced fruit, red coloured seeds covered by a white aromatic aril. Discovered species is systematically analysed

### from... Page 01

and found that which have all qualities of medicinal potential. Like other *Zingiber* species may also have medicinal potential, Indian taxonomist Dr. Singh told. *Zingiberis* have been found beneficial as a drug/remedy for various health problems. Indian and possess many ethnomedicinal assets and the importance of the *Zingiberis* in ethno-pharmacology is now well known. It is supported by the scientific information recorded in the pharmacological studies not only in India but also at global level. The discovery of new species can open new avenues for research and enhance availability of potential," Dy. Director of BSI Port Blair Dr. Singh told.

## BSI scientists discover new species of ginger in isles



**PORT BLAIR, JAN 10**—/ Scientists of the Botanical Survey of India (BSI), Regional Centre here has discovered a new species of ginger in the Andaman and Nicobar Islands. According to information, the species, *Zingiberpseudosquarrosium*, new to science, belonging to genus *Zingiber*, has been used by the PVTGs (Particularly Vulnerable Tribal Groups) of these islands for years owing to its medicinal values.

After collecting and systematically analysing the species found in the North and Middle Andaman region, scientists have found that the new species indeed possesses ethno-medicinal uses.

"The fresh extract of fleshy tuberous roots is used to treat abdominal pain and anti-helminthic troubles by Nicobarese and certain other tribal communities. The pseudo stem of the new species is predominantly red

in colour. Flowers have a vermillion tinge and fully mature fruits are lotus shaped. Inflorescence buds are urceolate in shape. The species has got tuberous root and the morphological features of the species makes it distinct from other species belonging to the genus *Zingiber*," according to BSI.

In a study published in the *Nordic Journal of Botany* authored by Dr. Lal Ji Singh and Director of BSI, Dr. Paramjit Singh, researchers said that the species can be distinguished by the presence of a small red coloured pseudostem, urceolate or prolate inflorescence bud, very long underground peduncle; orange red (vermillion) lotus shaped dehisced fruit, red coloured seeds covered by a white aromatic aril. Like other *Zingiber* species may also have medicinal potential, Indian taxonomist Dr. Singh

said. "*Zingiberis* have been found beneficial as a drug/remedy for various health problems. The discovery of new species can open new avenues for research and enhance availability of potential," says Dr Singh.

Species belonging to genus *Zingiber* are monocotyledonous flowering plants whose rhizomes are widely used as a spice or a traditional medicine. Commonly used species of *Zingiber* (*Zingiber officinale*) known for its aromatic smell is cultivated widely across India. As per scientific information, there are 141 species of genus *Zingiber* are distributed throughout tropical Asia, including China, Japan and tropical Australia. Of these, 20 are reported from India, which include seven (latest being *Zingiber pseudosquarrosium*) from Andaman and Nicobar Islands.

## NEW TO SCIENCE



### *Musa indandamanensis* L. J. Singh

This new species has been discovered and described based on collection from **Krishna Nallah, Little Andaman, Andaman and Nicobar Islands, India.**

# अण्डमान निकोबार द्वीप समाचार

संख्या 264

पोर्ट ब्लेयर,

मंगलवार, 29 सितम्बर 2015

web: www.and.nic.

## द्वीपसमूह से हरे फूल एवं नारंगी रंग के गुद्देदार केले की एक नई प्रजाति की खोज



पोर्ट ब्लेयर, 28 सितम्बर।

भारतीय सूचना और अण्डमान और निकोबार द्वीपसमूह न केवल अपनी भूगोल इतिहास और सांस्कृतिक बरिच अमनी अमूर्त प्राकृतिक पारिस्थितिक तंत्र एवं अद्वितीय संसाधनों के कारण एक अलग पहचान बनाए हुए है। यह द्वीपसमूह जमान को खोज में स्थित 572 द्वीपों का समूह है। घाटप वनिकी के क्षेत्र में नारंगीय बनस्पति संरक्षण एक अमनी संस्कृति संस्था है, जिसकी स्थापना ब्रिटिश काल में की गई थी, तब से आज तक यह संस्था सतत एवं निरंतरतापूर्वक कार्यरत है, जिसकी उपलब्धियां देश ही नहीं, बल्कि विश्व स्तर पर उल्लेखनीय हैं। इसी कड़ी में अंतर्राष्ट्रीय पत्रिका टाईममैगजिन में प्रकाशित एक नए अध्ययन के अनुसार भारतीय बनस्पति संरक्षण के वैज्ञानिक डॉ. लालजी सिंह ने हरे फूल एवं नारंगी रंग के गुद्देदार केले की एक नई प्रजाति की खोज की है। इस नई प्रजाति की खोज लिटिल अण्डमान द्वीप में गहन अन्वेषण का परिणाम है।

### द्वीपसमूह से हरे फूल — पृष्ठ 1 का शेष

केले की खोजी जा चुकी है और संकलित खाद्य उप- प्रजातियों का प्रलेखन मिलता है इनमें से लगभग 15 प्रजातियों का विवरण भारत में रिपोर्ट किया गया है। भारतीय द्वीपसमूह अण्डमान के लिटिल अण्डमान, कृष्णा नाला जंगल से खोजी गयी दुनिया की अनोखी केले की प्रजाति का नामकरण मूल इंडोअमनेन्सिसारल, जे. सिंह (सिंसेरी) किया गया है। इसके खोजकर्ता वैज्ञानिक डॉ. लाल जी सिंह ने इसका नामकरण हमारे देश व समूह स्थान को सम्मानित करते हुए किया है। इंडो हबद भारत (इंडिया) का प्रतिनिधित्व और अण्डमानेन्सिस शब्द समूह स्थान अण्डमान का प्रतिनिधित्व करता है। यह प्रजाति विज्ञान के लिए नवीन खोज है जो अद्वितीय गुणों से भरपूर है। यह नई प्रजाति, अन्य ज्ञात केला प्रजातियों से विवेक गुणों में अलग है, जैसे हरे रंग काइन्कोरेसेस, बहुत लंबे लस (लगभग 2 मीटर) 1830-फूल प्रति गुच्छ, नरम गीला, संकनीय बीज युक्त एवं पीले नारंगी रंग के गुद्देदार फल आदि इसकी अपनी एक विशिष्ट

पहचान है। इसके साथ इस प्रजाति में वंश-वृद्धि तंत्र एवं बीज दोनों के द्वारा इनके उत्पत्ति स्थान (ष्णा नाला एवं अन्य भौगोलिक वितरण क्षेत्रों) में होता हुआ देखा गया है और इसकी नर्सरी पौध धनीखांडे प्रायोगिक उद्यान व तृण क्षेत्र में बीजों से संकलनापूर्वक तैयार की गयी। यह बोटैनिकल गार्डन अण्डमान व निकोबार द्वीपसमूह में घाटप संरक्षण का एक प्रमुख सक्रिय केन्द्र है। लिटिल अण्डमान के जंगलों के अलावा इस बोटैनिकल गार्डन में इस केले की प्रजाति का संरक्षण एवं संवर्धन देखा जा सकता है। भारतीय बनस्पति संरक्षण, अण्डमान एवं निकोबार क्षेत्रीय केंद्र के प्रमुख शोधकर्ता एवं वैज्ञानिक डॉ. लालजी सिंह ने कहा कि खोजी गयी यह नई प्रजाति, विश्व में खाद्य केले की आधिक उपज देने वाली, प्रतिरोधी किम्व को विकसित करने के लिए आनुवंशिक आधार पर घाटप प्रजनक वैज्ञानिक (लॉट ब्रीडर) के लिए यह एक विकल्प के रूप में अपना अद्वितीय स्थान ले सकती है।

शेष पृष्ठ 4 पर

CHENNAI, MONDAY, OCTOBER 12, 2015

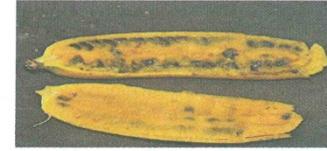
# THE HINDU

INDIA'S NATIONAL NEWSPAPER SINCE 1878

Regd. TN/AR/17/2012-2014 - EN No. 1001/1957 - ISSN 0971 - TSX - Vol. 138 - No. 243 - CITY EDITION - 32 Pages - Rs. 4.00 - www.thehindu.in  
Printed at Chennai, Coimbatore, Bangalore, Hyderabad, Madurai, Noida, Visakhapatnam, Thiruvananthapuram, Kochi, Vijayawada, Mangalore, Tiruchirappalli, Kollata, Hobbali, Mohali, Allahabad and Malappuram

20

## Andamans yield a sweet banana with orange pulp



Shiv Sahay Singh

**KOLKATA:** Scientists at the Botanical Survey of India (BSI) have discovered a new species of banana from a remote tropical rain forest on the Little Andaman islands.

The species, *Musa indandamanensis*, was located about 16 km inside the Krishna Nalah forest in the island.

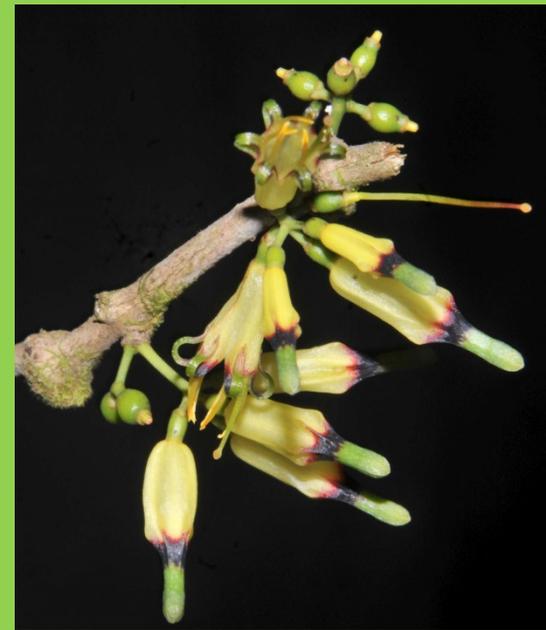
The scientists who have made the discovery describe it as a distinct global species with unique green flowers and fruit bunch lux (axis) thrice the size of a regular banana species.

"The new species is about 11 metres high, whereas as the usual banana species is about three to four metres high," Lal Ji Singh, Head of Office, Botanical Survey of India, Andaman & Nicobar Regional Centre, told *The Hindu*.

The details of the new species were published in *Taiwania*, a journal on taxonomy and life sciences. Mr. Singh said that the species was edible and very sweet. The tribal people on the island eat it. The fruit pulp is orange in colour, distinctive from the white and yellow colour of regular bananas.

Unlike many banana species whose flowers are conical, its flowers are cylindrical.

NEW TO SCIENCE



*Macrosolen andamanensis* L.J. Singh (Loranthaceae)



***Scurrula paramjitii* L. J. Singh**

**This new species has been discovered and described based on collection from APWD Guest House campus, Rangat, Middle Andaman, Andaman and Nicobar Islands, India.**



## The Daily Telegrams Magazine

### New To Science: New Species of Ethno medicinal Mistletoes discovered in Andaman and Nicobar Islands by BSI Scientist

BSI Scientists have discovered two new hemi parasitic species of mistletoe in the Andaman and Nicobar Islands. The Andaman and Nicobar islands constitute one of the hotspots of biodiversity in the country with 372 Islands. Dy. Director & Scientist, BSI, Dr. Lal Ji Singh stated that, except for few notable exceptions, there has never been a comprehensive attempt to establish a systematic documentation of mistletoes by taxonomists in the Andaman and Nicobar Islands. However, the phytodiversity of these islands is one of the unique and richest not only in the country but also at global level with remarkable degree of genetic variations because of this the new species are still continued to be discovered in these Islands. On a recent trip through North and South Andaman the lead researcher & taxonomist Dr. Singh



Photos : Scurrulaparamjitii L. J. Singh, Macrosolenandamanensis L. J. Singh

discovered two endemic and haustorial hemi parasitic species: *Scurrulaparamjitii* and *Macrosolenandamanensis*. The species *Scurrulaparamjitii* named in honour of Dr. Paramjit Singh, Director & Scientist, Botanical Survey of India, Ministry of Environment, Forest and Climate Change for extensive contributions to the knowledge of Angiospermifloran Andaman Islands. This species differs from all other mistletoes by its morphology of vegetative and floral characters. These discoveries were published more recently in the *International Journal of Life Sciences, Taiwan* 60(3):123?128 (Contd. on page 6)

#### New To Science...

(Contd. from page 3)...

and *Indian Journal of Forestry* 36(1):55-59 respectively. It is widely accepted that the spread of mistletoe species is by seed dispersal and these are usually mediated by birds that thrive on mistletoe fruit or host through fecal excretions or regurgitations. Dr. Singh stated that in Indian mistletoes grow on a wide range of host trees. He believes that the parasitization and selection of host species is either an opportunistic phenomenon or an availability of host through time and space.

Dy. Director & Scientist, BSI, Dr. Lal Ji Singh also stated that, during the course of evolution, the parasitic mistletoes habit has evolved independently five times within flowering plants with worldwide distribution except Antarctica. About 1% of the flowering plants are considered to be parasitic of which ca. 1400 species are classified as mistletoes at global level. It is ecologically and economically significant. Mistletoes are now known as "cure all" and have been found beneficial as a drug/remedy for various health problems. Indian taxonomist Dr. Lal Ji Singh stated that Mistletoes possess many ethnomedicinal assets and the importance of the mistletoes in ethnopharmacology is now well known. It is supported by the scientific information recorded in the pharmacological studies not only in India but also at global level.

It is now appreciated that mistletoes are therapeutically useful in oxidative stress induced health problems and potential sources of natural anti-oxidants, and have great potentials as medicinal agents and known as "cure all" and have been found beneficial as a drug/remedy for various health problems. ❖

**NEW TO SCIENCE**



***Carissa andamanensis* L.J.Singh & Murugan**

# NEW TO SCIENCE



*Cycas pschannae* R.C. Srivast. & L. J. Singh

## New Record for India:

### Identified and confirmed three species as new distributional records for India - 06

- *Cosmostigma racemosum* (Roxb.) Wight *Indian Journal of Forestry* 2013, 36(4):527-528.
- *Dendrophthoe glabrescens* (Blakely) Barlow. (Loranthaceae) *Geophytology* 2013, 43(1): 41-49
- *Diplazium proliferum* (Lam.) Thouars *Journal of Japanese Botany*. 91: 57–60
- *Heterotis rotundifolia* (Sm.) Jacq.-Fél. *Geophytology* 45(1): 101-106
- *Macrosolen melintangensis* (Kurth) Miq. (Loranthaceae) *Rheedea* 2013,23(2):108-112
- *Pavetta gleniei* Hook.f.(Rubiaceae); *Indian Journal of Forestry* 2013, 36(1):125-128.

### New Generic Record for India - 01

- *Heterotis* Benth. (Melastomataceae) *Geophytology* 45(1): 101-106

### A New Generic Record for Andaman and Nicobar Islands - 02

- *Cosmostigma* (Apocynaceae, Asclepiodoideae) *Indian Journal of Forestry* 2013, 36(4):527-528.
- *Heterotis* Benth. (Melastomataceae) *Geophytology* 45(1): 101-106

### **An Addition to the State Flora - 06**

- *Adiantum latifolium* Lam. (Adiantaceae) *Geophytology* 2015, 45(2): 261-264
- *Dendrophthoe glabrescens* (Blakely) Barlow (Loranthaceae) - Flora of Tamil Nadu, India - *Indian Journal of Forestry* 2013, 36(4) : 523-524.
- *Ruellia* L. (Acanthaceae) - Flora of Andaman and Nicobar Islands *Indian Journal of Forestry* 2014, 37(4): 425-428.
- *Cyathea gigantea* (Wall. ex Hook.) Holttum, Flora of Andaman & Nicobar Islands. *Indian Journal of Forestry* 2016, 39 (1) : 77-78.
- *Dendrophthoe glabrescens* (Blakely) Barlow (Loranthaceae) - Flora of Andaman and Nicobar Islands, Himachal Pradesh, Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand and Sikkim 2016, *Bionature* 2016, 36 (1): 3-7
- *Eleocharis spiralis* (Rottb.) Roem. & Schult. (Cyperaceae) Flora of Andaman & Nicobar Islands *Tropical Plant Research* 2016, 3(2): 289–291



*Dendrophthoe glabrescens* (Blakeley) Barlow has been reported for the first time from India based **on live collection** made from Vvet Guest house campus, Hut Bay, Little Andaman in 2013.



*Dendrophthoe glabrescens*  
(Blakeley) Barlow

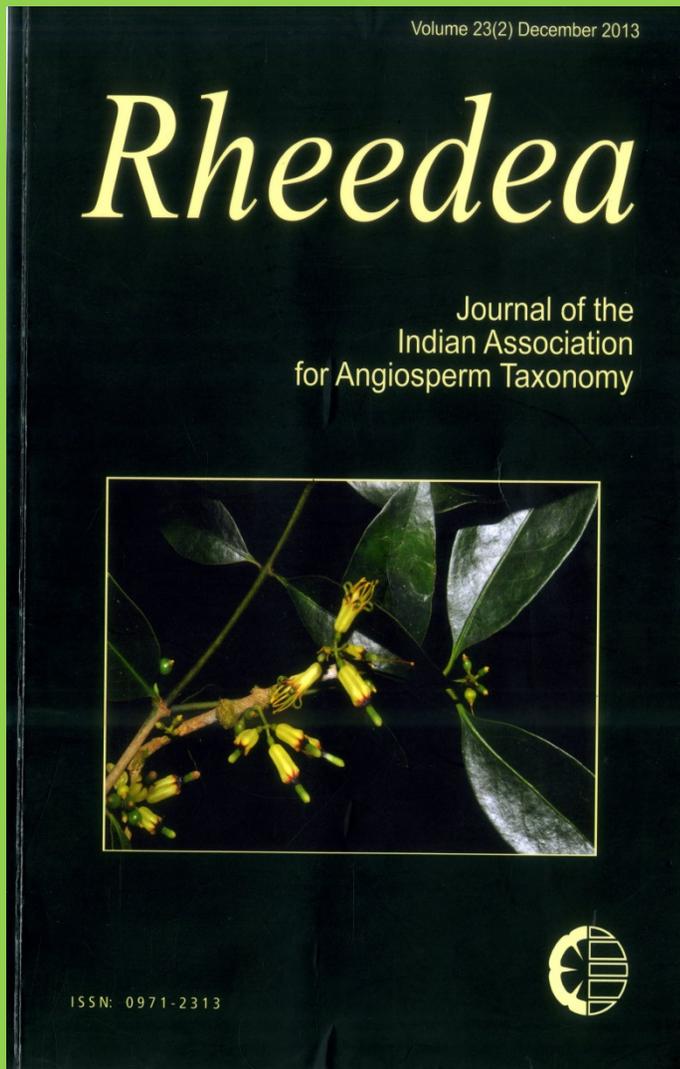
## BOTANICAL CURIOSITIES



Figure 1. *Hibiscus cannabinus* L. (Malvaceae). a, Flowering twig, b, Fruiting twig, c- e, Various stages of viviparous on mother plants, f, Plants established from the viviparous seedlings.

**Reported vivipary for the first time in non-mangrove species as a potential reproductive strategy in Island's ecosystem**

# PUBLICATIONS



**Published : 83 Nos. till date**

**April, 2016 to January, 2017**

**Published : 13**

**Communicated : 04**

**Cover Image:** *Macrosolen melintangensis* (Korth.) Miq.,

It was reported for the first time from India by Lal Ji Singh from Nayashahar, South Andaman.

# **Administrative work**

**Head of Office ( *w.e.f.* 03.03.2015 to till date )**

- **Garden in Charge, Dhanikhari Experimental Garden-cum-Arboretum (DEGCA)**
- **DDO**
- **Security Officers**
- **Hindi Relation Officer**
- **Member of Disciplinary committee**
- **Secretary Phyton Club**
- **Garden in Charge, Botanical excursion in charge, Co-ordinator of Certificate course of Mushroom cultivation and Kitchen gardening, Department of Botany, ISDC (University of Allahabad) *w.e.f.* 2002-2005**
- **Field Investigator in World Bank Project “ Education for all” during 1995-1996**
- **Secretary Shiksha Sansad of Government CPI, Allahabad during 1995-1996**
- **Group leder in NSS camp, University of Allahabad during 1989-1990.**
- **Organizing various events Seminar, Training program workshops etc.**

## **Advisory Services Rendered**

Performed duties as a member of

- **Executive Council of Andaman Adim Jan Jati Vikas Samiti, Andaman and Nicobar Islands,**
- **Town Official Language Implementation Committee (TOLIC),**
- **Journal of the Andaman Science Association,**
- **State Medicinal Plants Board, Andaman and Nicobar Islands,**
- **Institutional Ethical Committee (IEC), Andaman and Nicobar Islands,**
- **Research advisory committee of the Chief Conservator of Forests, Research & Working Plan, Andaman and Nicobar Islands.**

- **Various project scientifically evaluated for various organization : Forest Research and Working plan, Department of Environment and Forest, Andaman and Nicobar Islands, National Children Science Congress,**

Performed duties as **Principal Investigator** for the projects-

- **Herbal Garden of Andaman and Nicobar Islands sponsored by NMPB, New Delhi.**
- **Medico botanical Survey of Andaman and Nicobar Islands.**

➤ **Performed duties as a reviewer** for the various International & National Journals

➤ Performed duties as an **external examiner** (to conduct practical examination, evaluation of theory copies, **Ph. D. Thesis** etc.), **question paper setter** for various Universities, Colleges & Institutes.

➤ **Performed duties as a reviewer** for the various International & National Journals

## SEMINARS, SYMPOSIA, WORKSHOPS, TRAINING PROGRAMS

### Organized

**Co-organized** an *International Conference on Climate Change Adaptation and Biodiversity: Ecological Sustainability and Resource Management for Livelihood Security* in association with Central Islands Agriculture Research Institute (CIARI) at Port Blair from 08.12.2016 to 10.12.2016.



*International Conference on*

### **CLIMATE CHANGE ADAPTATION AND BIODIVERSITY: ECOLOGICAL SUSTAINABILITY AND RESOURCE MANAGEMENT FOR LIVELIHOOD SECURITY**

**(ASA : ICCB - 2016)**

**8 -10 December 2016**





**Dr. Lal Ji Singh, Scientist 'D' receiving the Fellow of the Andaman Science Association Award for his exemplary contribution to research and development benefiting Andaman and Nicobar Islands.**



**Attended: 23**  
**National: 19; International 04**

**SEMINARS, SYMPOSIA, WORKSHOPS, TRAINING PROGRAMS ATTENDED**





Dr. Lal Ji Singh, HOO, BSI, ANRC delivering a key note address during National Conference on Climate Change, Biodiversity and Bio-resource management at Port Blair



Dr. Lal Ji Singh, HOO, BSI, ANRC receiving memento as a guest of honor during National Conference on Climate Change, Biodiversity and Bio-resource management at Port Blair

## Workshop / Training /Exhibition - 13

Organized - 05

Attended - 13

- Organized One Day workshop on “**Administrative matters**” on 31<sup>st</sup> March 2016.



- **Shri Sandeep Mukherjee, Under Secretary, DOPT, New Delhi was speaker.**
- He delivered lectures on Seniority Principles, DPC procedure, sealed cover procedures, confirmation, Conduct Rules-Dos and Dents, GFR-purchase procedure etc.

## **Awards / Membership**

### **❖ Awards:**

- **Fellow of Indian Botanical Society (FBS)**
- **Fellow of Association of Plant Taxonomy (FAPT)**
- **Fellow of Andaman Science Association (FASA)**

### **❖ Membership:**

- **Life member of Indian Botanical Society**
- **Life member of International Society of Plant Morphologist**
- **Life member of the Palaeobotanical Society**
- **Life member of Andaman Science Association**
- **Life member of Association of Plant Taxonomy**

# Summary

- Seeds and seedlings of various trees species, zingbers & rattans have been collected and introduced in garden
- Phenology (flowering and fruiting period) of **73 tree species** which are established at the Dhanikari Experimental Garden-cum-Arboretum **have been recorded for the first time.**
- **06 New Species,**
- **01 Generic record of India**
- **01 New record for India**
- **06 new record for State flora**
- **Presence of Phloem wadges in roos of some Bignoniaceous taxa**
- **Occurrence of aerial roots in various dicotyledonous plants.**
- **Occurrence of vessels in some Pteridophytic taxa**
- **Occurrence of Vivparry in non-mangrove plants.**

## Future plan of research

➤ Ex-situ conservation of RET species

➤ Floristics studies of some families :  
Cycadaceae, Loranthaceae, Musaceae,  
Zingiberaceae.



Thanks