



BSI NEWSLETTER

The monthly electronic newsletter of Botanical Survey of India

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Director's column

The scientists of BSI reported two species, *Impatiens parkinsonii* (Balsaminaceae) and *Carpesium cordatum* (Asteraceae) for the first time from India and also recollected an orchid species, *Diplocentrum recurvum* from Horsley hills of Chittoor district in Andhra Pradesh after a gap of more than 100 years.

During this month, the scientists, scientific staff and research scholars of BSI conducted field tours, mainly to the protected areas like Amchang Wildlife sanctuary, Kamrup, Assam; Madhei Wildlife sanctuary, Bondla Wildlife sanctuary and adjacent areas in Goa; Shoolpaneshwar Wildlife Sanctuary, Gujarat; Biligirirangaswamy Wildlife Sanctuary, Karnataka; Kodaikanal Wildlife Sanctuary, Tamil Nadu and Sonanadi Wildlife Sanctuary, Uttarakhand.

Besides, Scientific officials of BSI conducted field explorations to several areas in Eastern Arunachal Pradesh (Nampong, Khonsa, Wakro, Zero etc.) for the project 'Grass flora of Arunachal Pradesh'; to Dzukou valley in Nagaland and Singalila National Park in Darjeeling district of West Bengal for the project, 'Pharmacognostic studies on Medicinal Aconites of India'; to Gopikanadar, Kathikund and Shikaripara blocks of Dumka district of Jharkhand for the project 'Wood rotting fungi of Rajmahal hills'; from Karnataka coast, for the project 'Seaweed Survey of Karnataka Coast' and collected ethnobotanical information from Nayagarh district of Odisha for the project 'Ethnobotanical Study of Orissa (Phase-II)'.

In all the units and regional centres of BSI during the month of September 2015, "Hindi-Pakhwara", "Hindi-Saptah" and "Hindi-Diwas" were celebrated by conducting various competitions like *Vad-vivad* (debate), *Nibandh lekhan* (essay writing), *Tippani & Computer par hindi tankan* (noting, drafting & typing hindi in Computer), *Prashnotri* (quiz) and *Saswar-paath* (recitation) and performing most of the official works in *Rajbhasha*. Prizes were distributed to winners of each competition.

Happy browsing!

Paramjit Singh

Director, Botanical Survey of India, Kolkata



HEAD QUARTERS, KOLKATA

A field tour to Gumla and Lohardaga districts of Jharkhand were conducted by Dr. R.K. Gupta Scientist 'D' and Sri Kaju Majumdar, Presv. Asst. to collect algal samples in connection with the project, 'Algal Flora of Jharkhand' from 3rd to 11th September 2015.

Dr. A.B.D. Selvam had undertaken a field tour to different parts of Nagaland (Dzukou valley) and Darjeeling district of West Bengal (Singalila National Park) from 7th to 18th September 2015 for the collection Aconites. Dr. Sudipta Kumar Das, AJCB PDF, conducted a field tour to West and South Sikkim from 13th August to 19th September 2015 and surveyed about 430 sq. km mainly confined to aquatic, terrestrial and sub aerial habitats of algae at East and North districts of Sikkim.

In connection with the project on 'Algal Flora of Jharkhand', 'Investigations on the phytoplankton diversity of fish Ponds and non-fish ponds of Sikkim in relation to fish cultivation', 'Studies on wild mushrooms of Sikkim', 'Studies on the macrofungi of AJCBIBG', 'Wood rotting fungi of Rajmahal hills', 'Revision of' the family Metzgeriaceae in India (Bryophyta)', the scientists, scientific staff and research students have done identifications, written descriptions and drawn illustrations.

Dr. Devendra Singh, Scientist 'C' prepared the data base of the 36 bryophyte specimens collected and identified from Sikkim. Dr. (Ms.) Monalisa Dey studied the type specimens obtained on loan from Friedrich-Schiller-Universität Jena, Germany (JE) *Drepanolejeunea siamensis* (Isotype) and *Drepanolejeunea tibetana* (Isotype). Dr. (Ms.) Dey Prepared database of 147 liverwort specimens. Further, Dr. Dey also prepared label of 80 herbarium packets.



Phemrong waterfall, West Sikkim



Epilithic algal growth in Phemrong waterfall



Floating algae in a subalpine lake located in deep forest of Barshey Rhododendron Wildlife Sanctuary, West Sikkim

Ms. Pamela Saha, SRF prepared database of 280 moss specimens collected from Darjeeling District deposited at General Herbarium of Cryptogamic Unit.

Two holotype materials, *Russula alatoreticulata* and *R. intervenosa*, received from Dr. K. Acharya, Calcutta University were accessioned and incorporated in Fungi section.

Antartica Programme

Dr. Devendra Singh visited New Delhi (AIIMS) and Uttarakhand (Auli) for Medical Examination and Pre-Antarctic Snow Ice-Acclimatisation training for the 35th Indian Scientific Expedition to Antarctica (ISEA) from 6th to 27th September.2015. Dr. Sing would be visiting Antartica for 3 months from December 2015 for collecting bryophytes.

Visitors/students

Two PG Pharmacy students from Post graduate college of Pharmacy, Bengal School of Technology, Chinsurah, Hooghly Dist., West Bengal visited Fungi section at CNH, Howrah. Dr. M.K. Bhattacharya, Associate Professor & Head Dept. of Botany & Biotech., Karimganj College, Assam and Dr. Jaideep Majumdar, Dept. of Biological Sciences, Burdwan Town School, Burdwan visited Cryptogamic unit at CNH building.

Conference attended

Dr. Sudipta Kumar Das, AJCBPDF participated and gave presentation on “Floristic study of the algae under the ice covers in the lakes of Arunachal Pradesh, India (Eastern Himalayas)” in the National conference on “Cryptogam Research in the Indian: Progress and Prospects”, held at CSIR-NBRI, Lucknow, Uttar Pradesh, from 28th to 29th September 2015.

Evaluation meetings

The Research scholars’ ‘Flora of India’ project work was evaluated at CNH conference room by the expert committee on 01.09.2015. The Director, BSI evaluated the work report of the regional centres and units of BSI during Heads of the office meeting held at CNH in the first week of September 2015.



Heads of Office Meeting held at Central National Herbarium, Howrah in the 1st week of September 2015

Biennial Progress Report presentations in front of Expert Committee by JRFs on 01.09.2015



AJC BOSE INDIAN BOTANICAL GARDEN, HOWRAH

Dr. S.P. Panda, Scientist 'B' proceeded on tour to North Bengal including Darjeeling, Sukna, Pundibari from 30.09.2015 to 05.10.2015 in connection with the project, "Enrichment of medicinal plant section (Charak Udyan) of AJC Bose Indian Botanic Garden through survey and introduction of medicinal plants".

Regular maintenance is being done for the plant saplings and orchids collected during the various tours in the Garden Nursery and Mist Chamber. Received seeds of various annual ornamentals from Botanic Garden of Indian Republic (BGIR), Noida for plantation in AJCBIBG, Howrah.

The Great Banyan Tree developed 6 new roots. 14 encaged roots were repaired with new bamboo caging. 15 aerial roots were encaged in bamboo cages to train them as prop root.

30 saplings of different RET and medicinally important plants including species of *Victoria* were provided to BGIR, Noida for *ex-situ* conservation.

Dr. S. P. Panda, undergone a training programme on "communication skill and time management" held at Institute of Govt. Accounts & Finance, Ministry of Finance, Regional Training Centre, 15, R.N. Mukherjee Road Kolkata on 10th and 11th September 2015.

Meeting conducted

80th Regional Council Meeting held on 3rd and 4th September 2015 at Curator Office. Representatives of staff unions from different establishments of BSI and all Head of Office of different Regional Offices of BSI were present in the meeting.

Hindi Pakhwara

Hindi Pakhwara was observed from 1st to 15th September 2015 by conducting different competitions for the officials. Prizes were given to the winners of the events.



Dr. A. Pramanik, Scientist 'E' & HoO addressing the officials during the *Hindi Diwas Samaroh*



Essay Competition during the *Hindi Pakhwara* observed at AJCB Indian Botanical Garden, Howrah

Visitors/students

Consulate General of China, Federal Republic of Germany, other VIPs, and students from different schools and academic institutions visited the botanic garden.

CENTRAL NATIONAL HERBARIUM, HOWRAH

Dr. O. N. Maurya, Scientist 'B' conducted tour to Vikramshila Gangetic Dolphin Wildlife sanctuary, Bhagalpur, Bihar from 16th to 23rd September 2015 and collected specimens of 47 field numbers.

Sri Shyam Biswa, Sri Saurabh Sachan, Sri Vijay Kumar Mastakar, Sr. Pres. Asstts. conducted a field tour to Rohtas, Nalanda and Bhabhua (Kaimur) of Bihar from 16th September to 2nd October 2015 for Plant collection.

Sri P.P. Ghoshal, Botanist in connection with the project on 'Flora of Betla National park, Latehar, Jharkhand' (c. 225.37 sq km) from 15th September to 2nd October 2015 and collected specimens of 232 field numbers.

Dr. Pushpa Kumari, Scientist 'C' in connection with the project on, 'ex situ conservation of Bamboos of India' transferred the new culms of *Bambusa tulda* var. *gamblei* developed from rhizome to the bambusetum.

Scanning Electron Microscopy

About 40 plant samples were imaged under SEM by scientists, scientific staff and research scholars of BSI, Howrah/Kolkata.

Hindi-Diwas Samaroh

In CNH Organized the *Hindi-Diwas samaroh* on 11th and 14th September 2015, in which 4 Hindi competitions for officials of CNH and one for scholars of BSI working at CNH were conducted.

Dr. P.V. Prasanna, Scientist 'F' & HoO and Dr. Vinay Ranjan, Scientist 'D' attended *Hindi-Diwas samaroh* at CBL and AJCBIBG on 14.09.2015 & 15.09.2015 respectively. Sri Manoj Emanuel Hembrom acted as evaluator in Hindi competitions held at AJCBIBG, Howrah.

Pubic service rendered

Dr. Avishek Bahattacharjee, Scientist 'B' delivered a lecture on 'Orchids and sustainable development' at Surendranath College, Kolkata on 29.09.2015.

Two plant samples received from two different organizations were identified and authentication certificate was issued.

Dr. S. Bandyopadhyay, Scientist 'B' provided feedback to the IPNI by which *Bauhinia griffithiana* Prain has been replaced by *Bauhinia griffithiana* (Benth.) Prain. Dr. Bandyopadhyay also provided information regarding author of one plant name [Dr. Walter F. Gastmans] for incorporation in the Author Query database of IPNI. Dr. Bandyopadhyay reviewed two MSS received from the journal *Rheedea*.

Supplied scanned PDF of literature on *Smithia* from three African Floras to Dr. M. Sanjappa, former Director, BSI, Bangalore.

Visitors/students

Drs. Shailaja Hittalmani and Dr. H.V. Nanjappa, Professors, Dept. of Genetics and Plant breeding, UAS, Bangalore; Dr. P.J. Raju, Andhra Pradesh State Sericulture Research and Development Institute, Hindupur; Dr. R. Ganesan, Asoka Trust for Research in Ecology & Environment, Bangalore; Dr. Schidanand Diwakar from Magadh University, Bodhgaya Bihar and Ms. Baishakhi Sarkar, Research Fellow, North Bengal University visited for herbarium and library consultation. 20 students of Jawaharlal Nehru College, Boko, Kamrup, Assam; 200 students from Burul High School, South 24 Parganas and 26 students from Barakar Sree Marwari Vidyalaya, Dist Burdwan visited CNH as part of their study tour.

Glimpses of Hindi-Diwas Samaroh celebrated at Central National Herbarium, Howrah



Publications

Zeng, L., Liu, Y-N., Gogoi, R., Zhang, L.J. and Yu, S-X. 2015. *Impatiens tianlinensis* (Balsaminaceae), a new species from Guangxi, China, *Phytotaxa* 227 (3): 253–260

Gogoi, R., Odyuo, N. and Daimary, R. 2015. *Impatiens parkinsonii* C.E.C. Fisch. (Balsaminaceae), a new addition to flora of India and notes on its typification, *Telopea*. 18: 383–387

Bandyopadhyay, S. and Bhattacharjee, A. 2015. Ph. D. thesis title. *Curr. Sci.* 109(6): 1009.

CENTRAL BOTANICAL LABORATORY, HOWRAH

An ethnobotanical field tour was conducted to Nayagargh district of Odisha from 24th to 4th September 2015 by Sri A.C. Halder, Botanist, Sri P. K. Baske, Botanist, and Dr. Dhole Pankaj Arvind, Bot. Asst. During this tour visits were made in tribal hamlets in Panchirida, Mahipur, Gania, Khandapara, Dasapala, and Odagaon forest ranges and interacted with tribes belonging to different communities like *Kondha*, *Sabar*, and *Soura*. A total of 181 field numbers of



Scientific officials of CBL during Ethnobotanical study of Nayagargh district of Odisha with key knowledge holders



Scientific officials of CBL collecting ethnobotanical information from Nayagargh district of Odisha

specimens were collected with 216 ethnobotanical information. Dr. K.A. Sujana, Scientist 'C' identified 22 plant species collected from Malkangiri district of Odisha and 31 from Balasore district of Odisha. Dr. A.K. Verma, Scientist 'B' and Ms. Monika Mishra, Bot. Asst. engaged in Cytological studies on *Abrus precatorious* growing in AJCBIBG, Howrah and digitized data provided on the herbarium labels of cytological herbarium (25 nos.) available in the center. Ms. Sagari Chaudhury, JRF working on the

project 'Ethnobotanical study of Lodha tribe of West Bengal and nutraceutical analysis of selected plant species' identified 15 plant species.

Hindi Diwas Samaroh

Hindi Diwas Samaroh was observed at CBL on 14.09.2015. All the staff participated in various competitions and prizes were distributed to the winners.



Hindi Diwas celebration at CBL



Distribution of prizes to the winners



CBL officials during Sulekh competition held in connection with Hindi Diwas Samaroh

Publication

Singh, H., Dhole, P. A., Baske, P. K. and Saravanan, R. 2015. Ethnobotanical observations on Deogarh district, Odisha, India. *J. Econ. Taxon. Bot.* 39(2): 2050-9768.

INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

The botanical paintings by Roxburgh are being interpreted with updated botanical nomenclature. Under this project species of the genera *Eugenia* (Myrtaceae) and *Ficus* (Moraceae) and *Cucurbita* (Cucurbitaceae) are being interpreted with updated nomenclature and descriptions. As a part of making a digital database of BSIS, 133 specimens of Monocots and 277 specimens of dicots were listed and updated the nomenclature.

Hindi Diwas

Hindi Diwas was celebrated on 14.09.2015 and competitive events and prize distribution ceremony was organized.



Hindi Diwas celebration at ISIM

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Dr. T.A.M. Jagadeesh Ram, Scientist 'D' identified 72 lichen specimens for the Lichens of Nicobar Islands.

Dr. Lal Ji Singh, Scientist 'D' & HoO. surveyed and recorded Phenology of 22 Tree species of Dhannikhari Experimental Garden cum Arboretum (DEGA).

Digitalization and identification of unidentified specimens are being done by the scientific officials of this centre.

Hindi Pakhwara

The centre has organized the Hindi fortnight from 1st to 15th September, 2015. During this period various competitions for Hindi and non-Hindi speaking officials were organized. Prof. S.C. Chaturvedi, Geography Dept., JNRM, Port Blair was the Chief Guest on the occasion of the main function on 14th September, 2015.

The centre has also organized two-day Hindi Workshop on 28.09.2015 and 29.09.2015.



Sri S. Thomas, MTS taught by Dr. Lal Ji Singh to write in Hindi

Swatchh Bharat Abhiyan

As part of nationwide sanitation and cleanliness campaign on *Swatchh Bharat Abhiyan* to achieve the goal of clean India, a massive drive of cleaning the surrounding area of ANRC office campus was undertaken by the Scientists and the staff on 29.09.2015. The main objective was to create awareness and cultivate the habit of maintaining a good healthy environment.



THE ECHO OF INDIA

Hindi Fortnight observance by BSI

PORT BLAIR, SEPT 15/-/ The Botanical Survey of India, Andaman & Nicobar Regional Centre. Haddo, observed the Hindi Fortnight from 1st to 15th September, 2015. Various competitions for Hindi and non-Hindi speaking persons were conducted during this period. The main function of the fortnight was organized on 14th September 2015. Dr. S. C. Chaturvedi, Professor, Geography Dept., JNRM, was the Chief Guest. In his address, Dr. Chaturvedi elaborated on the role of Hindi from the freedom struggle to modern India. He emphasized that Hindi could be a cementing force in making India a super power. He also felicitated the winners of various competitions.



Earlier, welcoming the gathering, the Hindi Raj Bhasa Adhakari, Dr. Sanjay Mishra, Scientist-B, said that in harmony with the regional languages, Hindi should be promoted to become the national language.

Scientist-D/Head of Office, spoke about the importance of using Hindi works in the office as well as in day to day life. Dr. Sandip Kumar Behera, Scientist B, proposed the vote of thanks. The programme was anchored by Mr. Gautam Anuj Ekka.

Dr. Lal Ji Singh.

New Records

Bulbothrix ventricosa (Parmeliaceae), *Relicina relicinula* (Parmeliaceae) have been reported for the first time in India by Dr. Jagadeesh Ram from Andaman and Nicobar islands.



Bulbothrix ventricosa and *Relicina relicinula* (Parmeliaceae)

Meetings/ Events attended

Dr. Lal Ji Singh, participated in the research advisory committee (RAC) meeting at Office of the Chief Conservator of Forests, Research & Working Plan, Van Sadan Haddo, Port Blair on 09.09. 2015.

Dr. Lal Ji Singh and Dr Sanjay Mishra, Scientist 'B' attended meeting on Development of nature trail at Dhanikhari Experimental Garden Cum Arboretum' at Office of the Chief Conservator of Forests, Research & Working Plan, Van Sadan, Haddo, Port Blair on 14.09. 2015.

Visitors

Smt. Krishna Banerjee, Head Mistress, Govt. M. School, Manglutan along with four teaching staff visited garden on 18.09.2015.

Publication

Jagadeesh Ram, T.A.M. 2015. Additional lichen records from the Andaman and Nicobar Islands – 2. *Indian J. Forest.* 38(2): 165–170.

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Dr. Manish K. Kandwal Scientist 'C' conducted One field tour to eastern Arunachal Pradesh covering Nampong, Khonsa, Wakro, Zero etc. from 22nd August to 13th September 2015 and collected specimens of 145 Field numbers for Grass flora of Arunachal Pradesh.

Dr P. Satyanarayana, Scientist 'D' & HoO and Sri B.B.T. Tham, Botanist identified specimens of 175 Field Numbers during the Herbarium Consultation tour to ASSAM Herbarium from 28th August 2015 to 18th September 2015 for Flora of Pakke Tiger Reserve and Wild Life sanctuary.

Dr.Vineet Kumar Rawat, Scientist 'C' identified specimens of 15 field numbers for the family Polypodiaceae of North East India.

Dr. Krishna Chowlu, Scientist 'B' conducted one herbarium consultation tour to BSI, Gangtok from 11th to 23 September 2015, to understand the project methodology in connecton with the study of Orchids of Arunachal Pradesh (Red Listing).

Dr. Umeshkumar L. Tiwari, Scientist 'B' identified 12 species of 36 accessions of unidentified specimens.

Hindi Saptah

Conducted *Hindi Saptah* Programme from 14th to 21st September 2015. Various competitions were conducted among the officials and Prizes were distributed to the winners.



Competitions conducted during Hindi Saptah at APRC, Itanagar, Arunachal Pradesh

Meetings attended

Dr. P. Satyanarayana, attended a meeting for discussion on Trading of Biological Resources and finalization of list of NTC's, at the Conference Hall, State Forest Research Institute, Itanagar on 14.09.2015.

Dr. Satyanarayana, also attended a meeting of Technical Committee for Wildlife Protected Areas, Arunachal Pradesh on 15.09.2015 in the Office Chamber of PCCF (WL & BD), Itanagar.

Publications

Angela, N., Chowlu, K. et al. 2015. Anatomy of some terete-leaved Orchid species. *Kasetsart Journal (National Science)* 49: 13-21.

ARID ZONE REGIONAL CENTRE, JODHPUR

Dr. S.L. Meena, Scientist 'D' and Dr. Harikrishna Peddi, Bot. Asst. conducted a field tour to Shoolpaneshwar Wildlife Sanctuary, Gujarat from 10th to 26th September 2015.

The Scientists and scientific staff identified specimens of 74 field numbers, collected under various projects.

Public service rendered

Identified 57 plant specimens brought by DCF, Machia Biological Safari Park, Rajasthan Forest Dept., Jodhpur.

Environmental education / Public awareness

Officials of AZRC participated in the Exhibition *Jan Suchana Abhiyan* organised by Department of Press and Information Broadcasting (PIB), Ministry of Information and Broadcasting at Umaidpur village (Ahor), Jalore District, Rajasthan from 2nd to 4th September 2015 and also in *Kisan Mela* organised by Central Arid Zone Research Institute (ICAR), Jodhpur on 24.09.2015. In these programmes, installed an exhibition stall and displayed various books, museum exhibits, herbarium specimens, live plant species, posters etc.



AZRCs participation in Jan Suchana Abhiyan at Umaidpur village, Jalore District, Rajasthan



Exhibition stall of BSI in *Kisan Mela*, organised by Central Arid Zone Research Institute (ICAR), Jodhpur

Hindi Saptah

Observed *Hindi saptah* from 8th to 14th September 2015. During the period several programmes viz., Poetry recitation, Quiz, Debate and Essay writing competitions were organised.

Publication

Maina, V. and Chakrabarty, T. 2015. Plants used for Adornment by Jarwa Tribe of Andaman Islands. In: Sanjeev Kumar (Ed.), *Recent advances in Ethnobotany*, pp. 86–89. Deep Publications, New Delhi.



Hindi Saptah observed at AZRC, Jodhpur

BOTANIC GARDEN OF INDIAN REPUBLIC, NOIDA

More than 50 plants comprising c. 25 species were introduced in the garden, this includes plants obtained from AJCBIBG, Howrah and Yamuna Biodiversity Park, Delhi. Besides, 29 winter annuals were sown for germination in beds in landscape areas, designated sections and pots and 201 plants belonging to Phoenix, Succulents and Cactus were planted in new pots for multiplication.

7 Bonsai plants (6 species) of age ranging from 5 yrs. to 20 yrs., 2 Gymnosperms, 9 Cacti (4 species) and 45 Succulents (10 species) were provided to AJCB Indian Botanic Garden, Howrah for introduction.

Hindi Pakhwara

हिंदी पखवाड़ा दिनांक 01.09.2015 से दिनांक 14.09.2015 तक मनाया गया। दिनांक 07.09.2015 को हिन्दी कार्याशाला का आयोजन भी किया गया जिसमें उद्यान के तीन व्यक्तियों ने निम्नलिखित विषयों पर व्याख्यान दिया तथा दिनांक 14.09.2015 को पखवाड़ा का समापन कार्यालयाध्यक्ष के उपस्थिति में सम्पन्न हुआ :

1. औषधीय पौधों, बीजों का संरक्षण एवं केंचुआ खाद बनाने की विधि एवं उसकी उपयोगिता - डा. कुलदीप सिंह डोगरा द्वारा,
2. पेड़-पौधों का महत्व एवं उनके विभिन्न प्रकार - डा. ए. ए. अंसारी द्वारा एवं
3. कार्यालय में हिन्दी में पत्राचार एवं प्रतिदिन प्रयोग में आने वाले शब्दों के बारे में - श्री आर. पी. शर्मा द्वारा।

Visitors/students

185 Students, 11 Teachers, besides many general visitors of Indian and foreigners visited the garden during this month.

Publication

बॉटेनिक गार्डन के पेड़ों का बनेगा पहचान पत्र। दैनिक जागरण सिटी, 01.09.2015, पृष्ठ 1

CENTRAL REGIONAL CENTRE, ALLAHABAD

In connection with state flora project, “Flora of Chhattisgarh” a survey and collection tour was undertaken by Dr. Arjun Prasad Tiwari, Pres. Asst. to Bilaspur and adjoining districts of Chhattisgarh from 7th to 18th September 2015 and a total of 900 specimens (290 field numbers) were collected .

For the project “Floristic diversity of Parvati Aranga Wildlife Sanctuary and adjoining Tikri forest area, Gonda, U.P.” a field tour was undertaken by Sri Vineet Kumar Singh, Bot. Asst. and Sri Parmanand Rai, Preserv. Asst. from 20th to 27th September 2015 and 450 specimens (150 field numbers) were collected. Live germplasm of some locally rare and important plant species were collected for introduction into the botanic garden.

In connection with the ongoing projects on floral diversity of Upper Ganga Ramsar site, Uttar Pradesh and Floristic diversity of Parvati Aranga Wildlife Sanctuary and adjoining Tikri forest area, Gonda, Uttar Pradesh, ca 45 species with different field numbers were identified. Similarly, for the Taxonomic studies on lichenised non thelotremoid Indian Graphidaceae, lichens of terai region, Uttar Pradesh, revisionary studies on family Roccellaceae and lichens of Rajasthan, Kutch and Gujarat, 13 species were identified. In addition, ca 139 earlier collected specimens housed at BSA were also identified.

Images of herbarium specimens of different species of *Terminalia* were supplied to Priyanka Ingle, Scientist ‘B’ Western Regional Centre, BSI, Pune.

Conservation

Saplings of *Gloriosa superba*, *Habenaria plantaginea*, *Oroxylum indicum*, *Curculigo orchioides* and *Helminthostachys zeylanica*, which were brought from Parvati Aranga Wildlife Sanctuary and adjoining Tikri forest area, Gonda, were introduced in the botanical garden.



Habenaria plantaginea in Tikri Resrve Forest, Gonda



Plumbago zeylanica — a medicinal plant near Parvati Aranga Wildlife Sanctuary, Gonda, U.P.

Public service rendered

Dr. A.N. Shukla, Scientist ‘B’ inspected Achanakmar-Amarkantak Biosphere Reserve, Chhattisgarh for physical verification of work done by the Forest Department, Govt. of Madhya Pradesh under Assistance to Botanic Garden scheme. A final inspection report was submitted to Director, Botanical Survey of India, Hqrs., Kolkata.

Dr. G.P. Sinha, undertaken an evaluation tour to Botanic Garden of Aligarh Muslim University on 19.09.15 under Assistance to Botanic Garden Scheme of MoEFCC, New Delhi.

Authenticated a plant specimen of *Spinacea oleracea* (Amaranthaceae) for Ms. Jyotsana Malaviya, M.Pharm student of Institute of Pharmacy, UCER, Naini, Allahabad.

Conference attended

Dr. G.P. Sinha, Scientist 'E' & HoO, Dr. Arti Garg, Scientist 'D', Dr. Bhawana Joshi, Bot. Asst., Ms. Pushpi Singh and Pooja Gupta, JRFs, attended National Conference on "Cryptogamic Research in India: Progress and Prospect" at NBRI, Lucknow on 28th and 29th September 2015. Dr. Sinha delivered a lecture entitled, 'Lichen diversity in India with special reference to Sikkim' in the conference. Two other oral presentations. 'Present status of microlichen diversity from Arunachal Pradesh (Pushpi Singh and K.P. Singh) and 'Preliminary study on lichens of Terai region of Uttar Pradesh' (Pooja Gupta and G.P. Sinha) were made by Research Scholars and a poster presentation, 'Taxonomic studies on the *Diorygma* from India (Pushpi Singh and K.P. Singh) was also made in the above conference. Abstracts of these presentations were published in the Conference Proceedings.

Meeting attended

Dr. G.P. Sinha attended the 13th Madhya Pradesh State Wildlife Board meeting, which was chaired by Hon'ble Chief Minister Sri Shivraj Singh Chauhan at Bhopal on 22.09.15.

Hindi Diwas/Saptah

Hindi Saptah from 7th to 14th September 2015 and *Hindi Diwas* on 14.9.2015 were celebrated at the Regional Centre. Competitions related to knowledge of *Hindi* viz., Essay competition – *Nibandh Pratiyogita* (निबन्ध प्रतियोगिता), Debate – *wad-viivad pratiyogita* (वाद-विवाद प्रतियोगिता) and Hindi computer typing – *computer par hindi tankan pratiyogita* (कम्प्युटर पर हिन्दी टंकण प्रतियोगिता) were organized during the week and prizes were distributed on *Hindi Diwas* (14.09.2015).

DECCAN REGIONAL CENTRE, HYDERABAD

Dr. K. Prasad, RA conducted a field tour to Bhadra Wildlife Sanctuary of Karnataka from 9th to 14th September 2015 in connection with Studies on taxonomy, phytogeography and conservation of South Indian *Habenaria* (Orchidaceae). Sri K. Chandra Mohan, JRF conducted a field tour to Satkosia Tiger Reserve, Odisha from 17th to 31st September 2015 and collected specimens of 96 field numbers. Sri Alok R Chroghe, SRF is on herbarium consultation tour to Central National Herbarium.

Identified 79 species in connection with the projects on 'Flora of Seshachalam Biosphere Reserve' (10 species by S. Nagaraju, Bot. Asst.), 'Flora of Satkosia Tiger Reserve' (15 species by Sri K. Chandra Mohan, JRF), 'Flora of Kawal Tiger Reserve' (29 species by Ms P. Annamma, JRF) and 'Flora of Greater Hyderabad' (25 species by Dr. J. Swamy, Bot. Asst.). Documented 25 species in connection with Flora of Nagarjunasagar – Srisailam Wildlife Sanctuary (15 species by Dr. L. Rasingam, Scientist 'C') and 'Flora of Satkosia Tiger Reserve' (10 species by Sri K. Chandra Mohan).

In connection with the digitization of Herbarium specimens at BSID, 800 specimens were scanned. Dr. Ali Hasnain Naqui (Flora of Karimnagar District) donated about 3000 specimens to this regional centre, which are being incorporated.

Hindi Diwas

Hindi Diwas was celebrated on 28th September 2015 at DRC, Hyderabad.



Hindi Diwas celebration at Deccan Regional Centre, Hyderabad on 28th September 2015

Publications

Venu, P. and Prasad, K. 2015. The existential crisis in Indian *Brachystelma* (Apocynaceae). *Curr. Sci.* 109(4): 680-682.

Mahendranath, M., Chetty, K.M. and Prasad, K. 2015. A re-collection of *Diplozentrum recurvum* Lindl. (Orchidaceae) after a lapse of 100 years or more from Andhra Pradesh, India. *J. Threat. Taxa* 7(10): 7712-7715.

EASTERN REGIONAL CENTRE, SHILLONG

One field tour to Amchang Wildlife Sanctuary was under taken by Ms. Nandita Sarma from 3rd to 14th September 2015 and collected specimens of 61 field numbers. Two local tours to Mawphlang, Mawsynram and Wards Lake, Botanical Garden, Shillong on 5th and 12th September 2015 was conducted by Ashish Venkatesh Prabhugaonkar, Scientist 'B'. Identified 29 species from Flora of Eastern Nagaland by Dr. N. Odyuo, Scientist 'D' and Dr. R. Daimary, Bot. Asstt., Amchang WLS by Ms. Nandita Sarma; Yangoupokpi Lokchao WLS (Manipur) by Sri R. Meitei, Bot. Asstt.

In connection with 'Taxonomy, phylogeny and ex-situ conservation of Micro-fungal diversity from north-east India with special emphasis on fungi associated with endemic and threatened plants of Meghalaya' Dr. Ashish Venkatesh Prabhugaonkar isolated and identified 16 species of Fungi from dead fronds of *Calamus* spp., leaf and twig litter, leaf spots collected during the local tours. For ex-situ conservation of Endemic, threatened and economically important plants of the region and recording phenological data on flowering and fruiting of species growing in the Garden, Dr. M. Murugesan, Scientist 'B' and Sri L.R. Meitei, Bot. Asst. observed and recorded phenological data of flowering and fruiting of 26 species.

For Micro-propagation of RET Plants of Northeast India, Dr. A.A. Mao, Scientist 'E' & HoO and L. Ibemhal Chanu, Bot. Asst. documented the photographs of all the *Rhododendron coxianum* (Ericaceae) grown in tissue culture laboratory in different concentration of WPM and AM with different supplements of hormone. Planted around 100 plants of *Rhododendron coxianum* in green house. Inoculated *Rhododendron coxianum* in different concentrations of (0.5,0.4,0.3,0.2,0.1) mg/l and control in WPM. Inoculated 800 nodal explants of *Rhododendron coxianum* in different supplements.

Regular subculturing of *Armadorum senapatianum* (Orchidaceae) is done. Prepared media of 0.2 and 0.1 mg/l of 2ip and inoculated *Rhododendron coxianum*. Prepared media with different concentrations of *Aloe vera*, Manganese sulphate .H₂O, Boric acid, Molybdic acid (sodium salt) 2H₂O, Zinc sulphate .7H₂O and Copper sulphate .5H₂O WPM for observing pseudo roots and root formation in short period. Also inoculated *Ilex khasiana* after surface sterilization in 10% (tender ones) and in 20% (little hard ones) of sodium hypochloride. Sprayed insecticides and fungicides in green house. Prepared media of ½ MS and 0.2 charcoal. Experiment on callus of *Rhododendron coxianum* in Plant molecular taxonomy laboratory.

For Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of Selected Species, Dr. Deepu Vijayan, Scientist 'B', Callus induction studies are being continued with *in vitro* raised leaf explants of *Pyrenaria khasiana*.

Rooting experiments of *Pyrenaria khasiana* has been initiated with mature shoots. Regular subculturing and maintenance of *in vitro* raised.

Public service rendered

Identified 70 samples of specimens received from various institutions.

Students/visitors

One Scientist, One Asst. Professor, Six Research Scholars visited the Centre from different Institutions, Colleges and Universities.



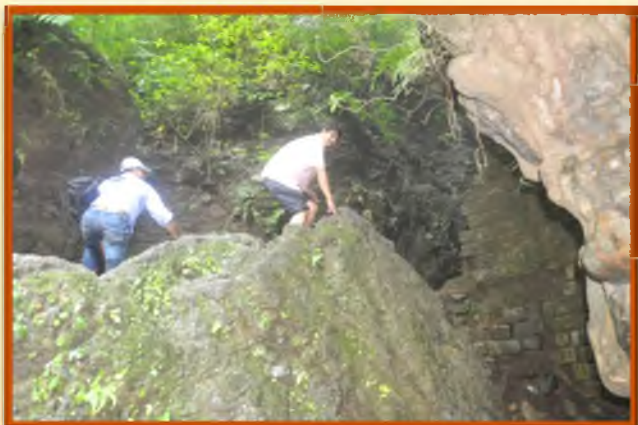
Impatiens parkinsonii (Balasaminaceae) – a new addition to flora of India

NORTHERN REGIONAL CENTRE, DEHRADUN

A one day live plant collection tour have been conducted by Dr. B.S. Kholia to Robber's cave, Dehradun.

Identified 98 species and described 41 species of Angiosperm for Flora of Uttarakhand Vol. V, Floristic Diversity and Phytosociological study of Simbalbara National Park, Flora of Nandhour Wildlife Sanctuary, Flora of Sonanadi Wildlife Sanctuary, Revision of family Bignoniaceae, Cyatheaceae and genus *Lepisorus* (Sm.) Ching in India.

Dr. P.K. Pusalkar, Scientist 'D' and S.K. Srivastava reported *Carpesium cordatum* (Asteraceae) from Uttarakhand as a new record for Indian flora.



Dr. B.S. Kholia during one day live plant collection tour to Robber's cave, Dehradun

Meeting attended

Dr. S.K. Srivastava, Scientist 'E' & HoO attended HoOM and RCM on 3rd & 4th September 2015 at Botanical Survey of India, Howrah. Dr. Srivastava presented the review progress of 2014-2015 and 2015-16 (April-Aug, 2015) in respect of Annual Action Plan Projects of NRC, Dehradun.

Digitization and scanning of Herbarium specimens in BSD

284 specimens of the family Brassicaceae and 60 specimens of pteridophytes belonging to various families were scanned and digitized during this month.

Himalayan Day

The centre has observed 'Himalayan Day' on 09.09.2015 and planted plant saplings.



The Himalayan day celebration at NRC, Dehradun



Planting sapling of *Pinus patula* on the occasion of the Himalayan day at NRC Garden

Hindi Pakhwara celebration

NRC has celebrated *Hindi Pakhwara* from 7th to 21st September 2015 and organised various activities during these celebrations.



Dr.S.K. Srivastava welcoming chief guest Dr. A. Rizvi, HoO, ZSI, Dehradun



Dr.S.K. Srivastava addressing during Hindi pakhwara celebrations at NRC, DehraDun

Public Service Rendered

Three plant samples received from three different organizations were identified.

Visitors/students

31 visitors' including 26 students from Unison world school have visited the centre for herbarium and Library consultation and also to the experimental garden of the centre.

Publications

Verma, D. 2015. Lectotypification of five species in *Impatiens* (Balsaminaceae). *Phytotaxa* 226(3): 298–300.

Manikandan, R. and Srivastava, S.K. 2015. Diversity, Medicinal and Threatened Plants in Govind Pashu Vihar Wildlife Sanctuary, Western Himalaya. *Indian Forest*. 141 (9): 966-973.

Pusalkar, P.K. and Srivastava, S.K. 2015. *Carpesium cordatum* F.H. Chen & C.M. Hu (Asteraceae) – A New Record for Indian flora. *Ann. Forest*. 22(2): 207-2.9.

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

Dr. D.K. Agrawala, Scientist 'C' has studied 20 orchid specimens and finalized their identity, assigned geo-coordinates and entered the data in excel sheet for the project, 'Red listing of Orchids of Eastern Himalaya' as per IUCN criteria.

Dr. Agrawala also identified 20 and illustrated 6 Orchid species based on live and unidentified specimens at BSHC.

Dr. Agrawala also collected 5 orchid samples from fallen tree logs in and around Gangtok town and introduced in the campus garden.

Sri. S.K. Raj, Pres. Asst. identified 24 species from unidentified sheets of BSHC.

Sri. S. Pradhan, Field man, identified 4 species from unidentified sheets of BSHC.

Public service rendered

Dr. Agrawala on 11.09.2015 visited Sikkim University for inspection of new campus at Yangyang to submit a list of medicinal and RET plants of Sikkim suitable for growing in the new campus.

Meeting(s) /symposia/seminars conducted/attended

Dr. Gangopadhyay, Scientist 'D' & HoO participated in the International Year of Soils organized by FAO – awareness workshop on 17.09.2015 at Gangtok.

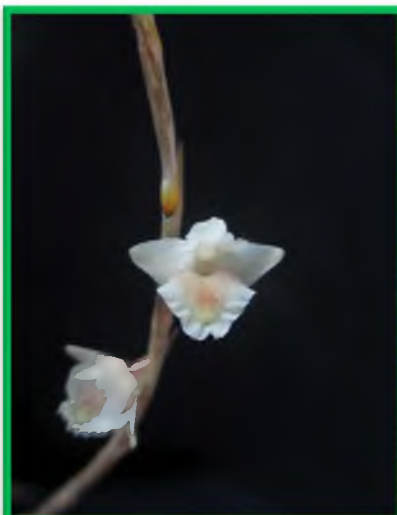
Dr. Agrawala delivered a talk on "Glimpses of Orchid diversity in Sikkim Himalaya" in GBPIHED, Sikkim Unit on 10.09.2015 during "2nd Himalayan Popular Lecture" and Annual Day. Dr. David Lalsama Biata Scientist 'B' attended "2nd Himalayan Popular Lecture" and Annual Day as an invitee in GBPIHED, Sikkim Unit.

Dr. Agrawala on 15.09.2015 attended State Forest Department, Gangtok as a member in the State level Khanchendzonga Biosphere Reserve Steering Committee meeting for finalization of draft Management Action Plan.

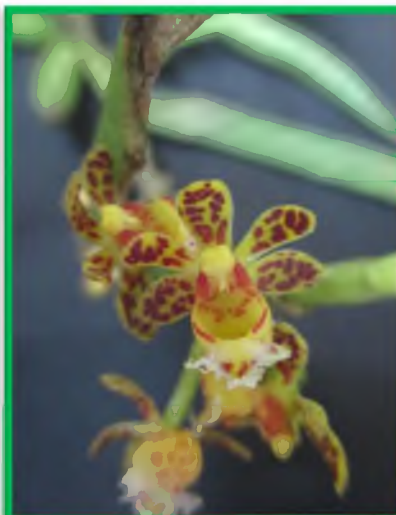
Hindi Pakhwara was observed from 14th to 29th September 2015 and various competitions were organized in this regard for officials of this centre. Dr. Agrawala on 14.09.2015 attended ARRI, Gangtok as invited speaker for inauguration of *Hindi Pakhwara*.

Visitors/students

Dr. Krishna Chowlu, Scientist 'B', APRC, BSI, visited this centre to obtain training on IUCN Red Listing from 14th to 20th September 2015. Mr. Alexander O'Neill, a Nehru-Fulbright Fellow from Washington D.C. working at GBPIHED, Sikkim Unit visited the centre for library consultation.



Dendrobium acinaciforme



Gastrochilus linearifolius



Zeuxine goodyeroides

SOUTHERN REGIONAL CENTRE, COIMBATORE

In connection with Seaweed Flora of Karnataka coast. Dr. M. Palanisamy, Scientist 'D' conducted a field tour to Karnataka coast from 15th to 27th September 2015 and collected specimens of 233 field numbers and prepared 466 herbarium sheets. Dr. Palanisamy also preserved live seaweed specimens of 26 field numbers for depositing into cryptogamic section of MH. Sri S.K. Yadav, Bot. Asst. carried out a herbarium consultation tour to CMFRI, Kochi and S.N. College, Kollam, Kerala from 14th to 18th September 2015 and 91 species of seaweeds and also collected fresh seaweed samples (38 field numbers) from Thirumullavaram coast, Kerala and preserved and deposited in MH.

Dr. J.H. Franklin Benjamin, Scientist 'B' and Sri R.G. Vadhayar, Bot. Asst. identified specimens of 35 field numbers for 'Flora of Malabar Wildlife Sanctuary, Kozhikode, Kerala'.

Dr. G.V.S. Murthy, Scientist 'F' & HoO and Sri K. Yarrayya, Sr. Pres. Asst., while studying Cyperaceae specimens in connection with Flora Tamil Nadu have corrected the wrongly identified herbarium sheets (16 Field nos.) of *Fimbristylis kingii* as *Fimbristylis subtrabeculata*. Dr. C. Murugan, Scientist 'D' and Dr. M.Y. Kamble, Scientist 'C' studied and consulted relevant literature in connection with 'Flora of Kerala' (Vol. 6), families Arecaceae (25 taxa), and Amaryllidaceae (15 taxa) & Dioscoreaceae (18 taxa) respectively.



Dr. Palanisamy collecting seaweeds from the submerged rocks during low tide



Luxuriant growth of *Enteromorpha* spp. growing on submerged rocks underneath sand



***Grateloupia lithophila* - a red seaweed**

Ex-situ conservation

In connection with the ongoing project 'ex-situ conservation of endangered and threatened plants' Dr. S. Kaliamoorthy, Scientist 'D' collected and introduced 12 species of Orchids into the garden at National Orchidarium and Experimental Garden (NO & EG), Yercaud. Dr. Kaliamoorthy and his team multiplied

149 plant samples (including 17 samples of orchids and 31 samples of other plants), developed 30 seedlings, 6 cuttings and sown seeds for 3 taxa. The team also recorded the phenology of 27 species including 16 species of orchids and 11 species of other Angiosperms.



Drosera peltata (Droseraceae)



Habenaria rariflora (Orchidaceae)



Habenaria heyneana (Orchidaceae)

Scanning Electron Microscopy

Dr. K.A.A. Kabeer, Scientist 'D' studied species of *Sporobolus* under SEM. Sri Gnanasekaran taken 20 SEM micrographs of the seeds of *Andrographis*, *Haplanthodes* and *Gymnostachyum* spp.

Public Service Rendered

Dr. Sudhakar reviewed a scientific article on the Genus *Pisonia* (Nyctaginaceae) for the Journal *Annals of Plant Science*.

During September 2015, a total of 21 plant samples were identified for research scholars and students from various institutions

Lecture delivered/workshop attended

Dr. M. Palanisamy delivered a lecture on 'Antartica' in the Periyar University, Salem, Tamil Nadu on 29.09.2015. Dr. S. Kaliamoorthy, Sri G. Gnanasekaran and Dr. S. Prabhu, AJCBPDF attended a workshop on 'Next Generation Sequencing', organized by St. Josephs College, Trichy on 10.09.2015.

Hindi Celebration

Hindi Quarterly Meeting was conducted at SRC Coimbatore on 13.09.2015. This regional centre celebrated Hindi Day on 14th September and Hindi Fortnight from 14th to 28th September 2015. During this period several Hindi competitions were organized for the officials as well as to the children

of the SRC officials were specially invited to participate in the Hindi competitions. The prizes were distributed to the officials as well as the children.



Hindi Day celebration at SRC, Coimbatore



SRC officials participation in Hindi competition

Visitors/students

Total 106 students, and 36 research scholars, lecturers and scientists visited the herbarium and library of SRC, Coimbatore and 1073 persons in 159 parties visited NO & EG, Yercaud.

Publications

Gnanasekaran, G. and Murthy, G.V.S. 2015. *Andrographis producta* (Acanthaceae), an endemic species from the Western Ghats: Its taxonomy, lectotypification and distribution. *Telopea* 18: 209–16.

Singh, R.K., Diwakar, P.G. and Sudhakar, J.V. 2015. *Bauhinia phoenicea* B. Heyne ex Wight & Arn., the less known endemic and threatened liana of the southern Western Ghats, requires immediate conservation. *J. Threat. Taxa* 7(10): 7676–7682.

Singh, R.K., Garg, A. and Singh, P. 2015. Taxonomy, lectotypification and rediscovery of *Gymnosporia bailadillana* (Celastraceae), a little known, critically endangered taxa of Chhattisgarh state, India. *Phytotaxa* 226(2): 101–118.

Singh, R.K. 2015. Lectotypification of four species of Indian *Trachyspermum* (Apiaceae). *Telopea* 18: 247–253.

Singh, R.K. 2015. Lectotypification of two names of Indian species of *Ceropegia* (Apocynaceae). *Telopea* 18: 305–308.

WESTERN REGIONAL CENTRE, PUNE

One field tour was conducted by Dr. J. Jayanthi, Scientist 'D' during the period 1st to 15th September 2015 to different areas of Biligiri Rangaswamy Temple (BRT) Wildlife Sanctuary, Karnataka to explore the plant diversity under the project entitled "Floristic diversity of Biligirirangaswamy Temple Wildlife Sanctuary, Karnataka". Ms. Shreya Sengupta, JRF also accompanied Dr. Jayanthi in connection with the project entitled "Microfungi of Biligirirangaswamy Temple Wildlife Sanctuary, Karnataka".

During this month about 95 angiosperm specimens were identified from protected areas such as Biligiri Rangaswamy Temple Wildlife Sanctuary, Sharavathy valley Wildlife Sanctuary in Karnataka and from Madei Wildlife Sanctuary, Goa. Three pteridophytic specimens were identified from Kudremukh National Park, Karnataka.

Dr. P. Lakshminarasimhan, Scientist 'E' & HoO and Dr. A. Benniamin, Scientist 'D' received Honourable Union Minister of MoEF&CC, Sri Prakash Javedekar at Pune airport on 16.09.2015.



Dr. P. Lakshminarasimhan and Dr. Benniamin welcoming Hon'ble Minister of MoEF & CC at Pune



Biennial progress report presentation in front of expert committee by JRFs of WRC

Public service rendered

Identified and authentication certificates were issued for 31 students from B. Pharm, M. Pharm. colleges, Ph.D. and P.G. students from different institutions.

Hindi Saptah

Hindi Saptah was conducted in WRC during the period 11th to 18th September 2015.

Sri Jeet Singh, Chief Conservator of Forests, Van Bhavan, Pune attended inaugural function of *Hindi Saptah* on 11.09.2015.

Sri Shukla, Hindi Officer, Indian Institute of Tropical Meteorology, Pune attended as Chief Guest BSI office on the occasion of *Hindi Saptah* on 16.09.2015.

Sri. Sunil Limaye, Chief Conservator of Forests, Van Bhavan, Pune attended valedictory function of *Hindi Saptah* on 18.09.2015 and distributed certificates to the prize winners.



Distribution of prizes during *Hindi Saptah*

Visitors/students

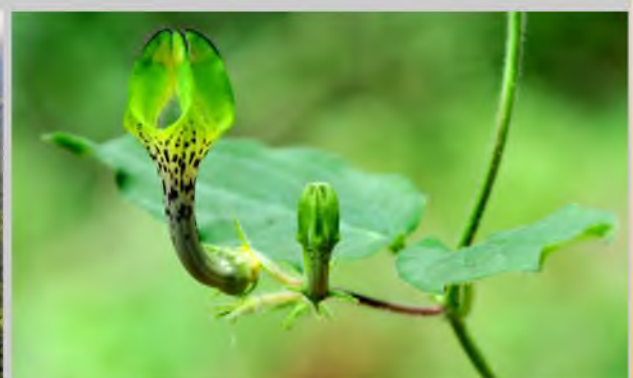
Dr. Sangita Daschoudhary, AJCB Post Doctoral Fellow, BSI, CNH, Kolkata visited WRC for herbarium consultation and field work.

Five M.Sc. students from Biotechnology Department of Bharati Vidyapeeth University, Pune visited WRC.

Dr. Ankur Patwardhan, Prof. along with 20 students of M. Sc. (Biodiversity) from Garware College, Karve Road, Pune visited WRC.



View of moist deciduous forests in BRT WLS, Karnataka



Flower of *Ceropogia hirsuta* in BRT WLS, Karnataka



PLANT OF THE MONTH

Couroupita gulanensis Aubl. (LECYTHIDACEAE) Known as Cannonball tree or Naglingam (Hindi) for its hood like arrangement of stamens is a native to Guyana. Planted world wide as ornamental avenue tree is also having medicinal and mythological importances.

By Dr. B.K. Singh

OF THIS LAND, F

Good Morning Sikkim, today is SATURDAY, 26 SEPTEMBER 2015 REGD NO. WB/SK/M-0

New mushroom species discovered in Sikkim

Only one edible among nine, says BSI

CHEWAN K. DAHAL

GANGTOK, September 24: Scientists of Botanical Survey of India (BSI) have discovered nine species of wild mushrooms from Sikkim Himalayas in 2015. Among the species discovered, *Cantharellus sikkimensis* is edible and consumed by the locals. BSI mushroom scientist Dr. Kanad Das, who along with his co-workers discovered the species, told SIKKIM EXPRESS that the species were discovered as part of his ongoing research project on BSI on mushrooms in Sikkim (2008-2019). The new species were found in the subalpine region particularly the Singba



Among the nine new mushroom species discovered in Sikkim, only *Cantharellus sikkimensis* (in picture) is edible.

Rhododendron Sanctuary and adjoining areas of North Sikkim. "These species were established after undertaking extensive and intensive field explorations during these years followed by thorough macro and micromorphological studies and molecular systematics of these species," said Dr. Das over phone from Kolkata. He mentioned that four among the discovered species belong to the genus

Lactarius, two of *Suillus* and one each from three genera namely, *Cantharellus*, *Bondarzewia* and *Austroboletus*. These new species of fungi are mushrooms, seasonal in nature growing in different times particularly during the rainy season. Dr. Das, who has extensively worked on mushrooms, had taken four survey tours to Sikkim to discover these nine species along with his survey team

from BSI. Beside the findings, he has already discovered at least 50 new species of mushrooms from different parts of India. He is also credited for writing the first volume of 'Mushrooms of Sikkim' during his posting in BSI, Sikkim centre till 2013. Asked whether the new *Cantharellus sikkimensis* can be cultured for commercial production, Dr. Das said it would be difficult to do so in an artificial setting. They require the symbiotic association of the host trees in nature, he said. "The mushroom species is vital for maintaining ecological balance in the forest. Alpine trees like Silver Fir will exist and grow as long as these mushrooms make them their hosts," added Dr. Das. According to the study findings, *Cantharellus sikkimensis* is edible. This species is more tall and slim in comparison to other species of this genus reported from India and is being consumed by locals like other chanterelles.



अण्डमान निकोबार द्वीप समूह

द्वीप समूह से हरे फूल एवं नारंगी रंग के गुद्देदार केले की एक नई प्रजाति की खोज

बिस्वा 284 पोर्ट ब्लेयर, मंगलवार, 29 सितंबर 2015 web: www.andnic




भारतीय द्वीपसमूह में अण्डमान और निकोबार द्वीपसमूह में खोजी गयी नई प्रजाति का नाम है 'हरे फूल'। यह प्रजाति का खोज करने वाले वैज्ञानिकों का एक अंतरराष्ट्रीय संघ है। यह प्रजाति का खोज करने वाले वैज्ञानिकों का एक अंतरराष्ट्रीय संघ है।

द्वीपसमूह से हरे फूल — यह 1 का रोम

भारतीय द्वीपसमूह में अण्डमान और निकोबार द्वीपसमूह में खोजी गयी नई प्रजाति का नाम है 'हरे फूल'। यह प्रजाति का खोज करने वाले वैज्ञानिकों का एक अंतरराष्ट्रीय संघ है। यह प्रजाति का खोज करने वाले वैज्ञानिकों का एक अंतरराष्ट्रीय संघ है।

Thanks to all the scientists and staff of various regional centres and units of Botanical Survey of India for contributing to this newsletter

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