



BSI NEWSLETTER



The monthly electronic newsletter of Botanical Survey of India

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November 2014

From the Director's Desk

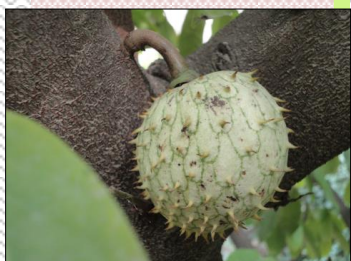
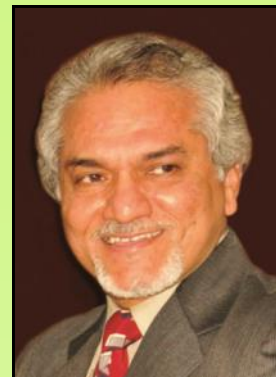
During this month, an administrative capacity building training workshop was conducted for Administrative and Scientific Officials working at Kolkata and Howrah to enhance the work output as well as for smooth functioning of the organization. Last month we had a meeting at Ministry of Environment, Forest & Climate Change regarding funding to organize the capacity building in taxonomy and evaluated various project proposals for sanctioning of the funds to conduct the research in plant taxonomy apart from to conduct the taxonomy oriented training programmes across the country. I am sure by conducting the taxonomic training programmes an interest can be inculcated in the budding students to pursue their research carrier in plant taxonomy.

The Birth Anniversary of Dr. E.K. Janaki Ammal was celebrated on 4th November 2015 at Indian Museum, Kolkata. On this occasion, Dr. (Mrs.) Vinita Damodaran, Director, Centre for World Environmental History, University of Sussex, England, delivered a special talk. We also discussed about the collaborative exercise between the Indian Museum, BSI and the University of Sussex and explored the possibility for digital repatriation of facsimiles of Indian flora from Great Britain.

In this month BSI scientists and scientific staff made field collection tours and collected information on ethno-botany from different tribal groups like Kondha, Sabar, Soura, Munda and Bhuinya of Buguda and Sorada forest Ranges of Ghumusar South Forest Division, Ganjam district, Odisha. The data collected during these tours definitely a much needed additions towards creating of the data base of the wealth of Indian plants.

Happy browsing!

Dr. Paramjit Singh
Director, Botanical Survey of India, Kolkata



Botanical Survey of India
Established in 1890



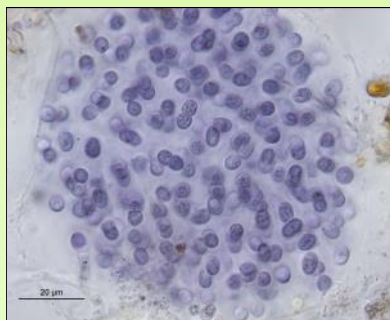
HEAD QUARTERS, KOLKATA

In connection with the ongoing projects on Algal Flora of Jharkhand, Liverworts & Hornworts Flora of Sikkim, Wild mushrooms of Sikkim, Wood rotting fungi of Rajmahal hills and the Koderma Wildlife Sanctuary (Jharkhand) and Pharmacognostic studies on Medicinal Aconites of India, specimens collected in previous months were identified by the Scientists, Botanists and Scientific staff besides preparing of descriptions and drawings.

Dr. Sudipta Kumar Das, AJCBPDF, in connection with his project, 'Taxonomic diversity and ecology of cyanobacteria and algae in the alpine regions of Eastern Himalayas' identified total 22 species belonging to 14 genera (Cyanophyta – 2 species under 1 genus; Chlorophyta – 3 species under 3 genera and Bacillariophyta – 17 species under 10 genera).



Lyngbya nigra
(Cyanobacteria)



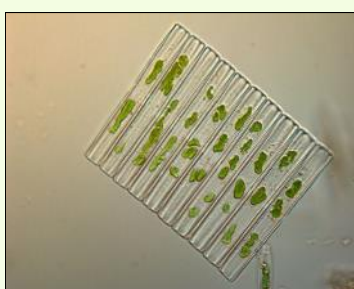
Aphanothece elebans
(Cyanobacteria)



Ecballocystopsis himalayensis (Chlorophyta)



Didymosphenia geminata
(Diatom)



Fragilaria capucina
(Diatom)

Dr. D. Singh, Scientist 'C' taken micro-photographs of Eight taxa by using LM and SEM viz., *Asterella mussooriensis*, *Cyathodium aureonitens*, *C. tuberosum*, *Marchantia hartlessiana*, *M. polymorpha* subsp. *ruderalis*, *Plagiochasma cordatum*, *Riccia huebeneriana* and *R. frostii*.

Public service rendered

Moss specimen received for identification from the National Institute of Technology, Durgapur was identified as *Hydrogonium consanguineum* by Dr. Nihal Aziz, Scientist 'D'. Similarly, Dr. R.K. Gupta identified 3 species of algae received from the same institute. Dr. Gupta also identified one pteridophyte specimen received from P.G. Department of Biosciences, Berhampur.

Dr. A.B.D. Selvam, Scientist 'C' pharmacognostically studied and authenticated four wood samples as the heartwood of *Pterocarpus santalinus* (Papilionaceae), which were received from Regional Deputy Director, Wildlife Crime Control Bureau, Eastern Region, Kolkata (1 no.) and Southern Region, Chennai (3 nos.).

Dr. Kanad Das, Scientist 'D' reviewed an article received from the journal *Mycotaxon*.

David Sanin of Botanic Garden Meise, Belgium sent requisition for collection of H.H. Smith collected from Santa Marta, Columbia of the *Polypodium* sp. deposited in CAL. Two specimens with field nos. 1030, 1025 could be located in our herbarium which was sent to CNH for onward transmission. Similarly, holotype of *Vittaria wattii* requisitioned by Cheng-Wei Chen, a PhD student of Taiwan Tsing Hua University was forwarded to CNH for its onward transmission.

Publications

Mukhia, S., Mandal, P., Singh, D.K., Singh, D. and Choudhury, D. 2014. In-Vitro Free-Radical Scavenging Potential of Three Liverworts of Darjeeling Himalaya. *International Journal of Pharmaceutical Sciences and Research* 5(10): 4552–4561.

Das, S.K. and Adhikary, S.P. 2014. Freshwater algae of Cherrapunjee and Mawsynram, the wettest places on earth. *Phykos* 44 (2): 29–43.

Gupta, R.K. and Das, S.K. 2014. Dr. Kalipada Biswas (1899 – 1969): Prakhyat Vanaspatijna. *Vanaspati Vani* 23:144–145.

Training/workshop organised

An administrative capacity building training workshop for Administrative and Scientific Officials of BSI from Kolkata / Howrah units was conducted at Central National Herbarium, Howrah from 6th to 8th November, 2014 (organized in association with MoEF & CC, New Delhi). At Central National Herbarium, also arranged the Presentation on "Virtual Library Solution/ Library Software retro conversion and Security Solutions" by Mr. Puneet Saini (Chief Technical Officer from Total IT Solutions Pvt Ltd.) on 18th November 2014. This presentation was attended by Central Library Committee members of BSI and officials of the Central Library.



Capacity building training workshop conducted at CNH



Meetings organised

A meeting between Dr. Paramjit Singh, Director, BSI and Dr. Vinita Damodaran, Director, Centre for World Environmental History, University of Sussex, Brighton, England was organized at Central National Herbarium, BSI on 5th November 2014. In this meeting discussion was made about the collaborative exercise between the Indian Museum, Botanical Survey of India and the University of Sussex, officials to explore the possibility of digital repatriation of facsimiles of Indian flora from United Kingdom.

Also a meeting between Dr. Paramjit Singh, Director, BSI and Ms. Bandana Shakya, Programme Coordinator, Brahmaputra-Salween Landscape Conservation and Development Initiative, International Centre for Integrated Mountain Development, Kathmandu, Nepal was organised at Central National Herbarium on 14th November 2014 to explore technical collaboration with BSI with regard to supporting the regional trans boundary landscape initiative between China, India and Myanmar.



Director, BSI as Chief Guest in the 37th All India Conference of the Indian Botanical Society held at Mumbai

AJC BOSE INDIAN BOTANICAL GARDEN, HOWRAH

A field tour was undertaken to Mungpo, Darjeeling Dist., West Bengal by Dr. A. Pramanik, Scientist 'D' & HoO and Dr. H.S. Mahapatra, Scientist 'C' to collect various plant saplings for ex-situ conservation.

Dr. Pushpa Kumari, Scientist 'C' made a field survey to collect the data of Bamboo growing areas in East and West Midnapore districts, West Bengal.

Plant saplings and orchids collected from Arunachal Pradesh, Assam and Meghalaya in previous tours are under observation and acclimatization in the nursery and mist chamber.



Devices made from Bamboo used by the local people in East and West Midnapore districts

Scientists of the AJCBIBG held a meeting with Mr. Jean Grier, Director, Orient Trust (Charitable Foundation) Scotland, UK, who visited the garden and discussed mainly about the renovation of Roxburgh building as well as restoration of other Old Buildings in the garden.

Students/visitors

Dr. Vineeta Damodaran, Sussex University, UK; Mark Gibson and Jean Grier, Orient Trust (Charitable foundation) Scotland, UK; Mr. James Simpson and Ms. Nilina Deb Lal (Architectural Advisers) visited the garden during this month. Besides, many other dignitaries and students from various schools and colleges of West Bengal also visited.



**Dr. Vineeta Damodaran, University of Sussex, UK
during her visit to AJCBIBG, BSI, Howrah**

CENTRAL NATIONAL HERBARIUM, HOWRAH

In connection with the 'Flora of Gautam Buddha Wildlife Sanctuary' (ca. 259 sq km), a tour was undertaken by Sri Anand Kumar, Bot. Asst. for a fortnight and collected the specimens by utilising 146 field numbers.



Forest near Jaigir forest block



**View of Dhoria village form
Dhoria hill**



Abutilon persicum



Butomopsis latifolia



Spermadictyon suaveolens



Utricularia aurea

For the ongoing project, 'Revision of the genus *Fimbristylis* (Cyperaceae)', a herbarium consultation tour to BLAT, AHMA and BSI was conducted by Dr. V.P. Prasad, Scientist 'D'. Dr. Prasad consulted about 80 specimens of 18 species of *Fimbristylis* in BLAT and noted the distribution data. Besides, the holotypes of *Pycneus boleii*, *P. lanceolatus* and *Mariscus blatterii*, *M. konkanensis* were studied by Dr. Prasad. In AHMA, Pune Dr. Prasad studied about 60 specimens of 17 species and in BSI, Pune, he consulted about 130 specimens of 21 species of *Fimbristylis* and noted the distribution data. Dr. Prasad also checked the isotypes of *Cyperus diwakarii* and *Pycneus kanarensis* in BSI.

Public service rendered

Scientists of CNH reviewed the manuscripts for various journals like *Bangladesh Journal of Botany*, *Journal of Bombay Natural History Society*, *Journal of Threatened Taxa* and *Phytotaxonomy* and sent their comments. Dr. V. Sampath Kumar, Scientist 'C' reviewed six project proposals submitted to the MoEF & CC, New Delhi for financial Assistance.

Images of three type specimens of *Derris yunnanensis* were sent from CAL for Dr Zhu-Qiu Song, Dinghushan Arboretum, South China Botanical Garden, Chinese Academy of Sciences, Zhaoqing, China. Sent the image of the type of *Vittaria wattii* to Mr. Cheng-Wei Chen, a PhD student of Taiwan Tsing Hua University. Similarly, sent the scanned image of the type of *Rhynchosia fischeri* to Sri R. Kottaimuthu, Research Scholar, Tamil Nadu. 10 specimens received from various institutions were identified and authentication certificate were provided.

Scanning Electron Microscopy

During this month, 33 samples of fungal spores, liverwort spores and thalli, and angiosperm leaves were scanned by the scientists, scientific staff and research scholars.

Lecture arranged

A talk on "*Nathaniel Wallich in search of the Assam tea*" by Prof. (Dr.) Martin Krieger, Department of History, Christian-Albrechts-University of Kiel, Germany was arranged at Conference room and was attended by the scientists, scientific staff and research scholars.

Meeting attended

Dr. Lakshminarasimhan, Scientist 'D' & HoO attended the Standing Consultative Committee meeting at Patna on 11th November 2014 (as a representative of Director, Botanical Survey of India) at the Forest Department to discuss about the working plans of two districts of Bihar.

Workshop organised

An administrative capacity building training workshop for Administrative and Scientific Officials of BSI from Kolkata / Howrah units was conducted at Central National Herbarium, Howrah from 6th to 8th November, 2014.

Visitors/Students

Dr. Guynn Jenkins and Ms. Khoo Salma of Penang, Malaysia visited CNH and consulted the Wallich Catalogue. Prof. (Dr.) Martin Krieger, Department of History, Christian-Albrechts-University of Kiel, Germany visited CNH and consulted the Nathaniel Wallich correspondence maintained at archival section of CNH. Sri Minz, Deputy Secretary, MoEF & CC, New Delhi visited CNH.



Dr. Guynn Jenkins and Ms. Khoo Salma from Malaysia and Prof. (Dr.) Martin Krieger from Germany at Monocot type section during their visit to CNH, BSI, Howrah

Students and faculty members of the following college and schools visited CNH as part of their study tour: Bankura Sammilani College, Bankura, West Bengal (50 students); Ramnagar College, Purba Medinipur (39 students); A.P. Dept., Calcutta Madrasah, Kolkata (11 students); Dhing College, Nagaon, Assam (35 students); Raibaghini High School, 24-Parganas (S) (60 students); Larambha College, Bargarh district, Odisha (15 students).



Dr. S. Bandyopadhyay giving lectures to the visited students



Publications

Bandyopadhyay, S. 2014. (2328) Proposal to reject the name *Bauhinia ruficarpa* (Fabaceae: Caesalpinioideae). *Taxon* 63(5): 1138.

Madhavan, M.K., Bhattacharjee, A. & Nampy, S. 2014. Rediscovery of *Zeuxine rolfiana* King & Pantl., a 'Critically Endangered' endemic Indian orchid from Andaman and Nicobar Islands, with a note on its typification. *Ann. Bot. Fennici* 51: 409 – 413.

Karthigeyan . K, Jayanthi, J. Sumathi, R. and Jalal, J. S. 2014. A review of the orchid diversity of Andaman & Nicobar Islands, India. *Richardiana* 15: 9–85.

CENTRAL BOTANICAL LABORATORY, HOWRAH

A field tour was undertaken to Ganjam district under the project 'Ethno-botanical study of Odisha' by Sri A.C. Halder, Botanist, Sri Nagaraju Siddabathula, Bot. Asst. and Sri Amit Diwakar Pandey, Sr. Pres. Asst. from 4th week of November to 2nd week of December 2014. Total 181 field numbers (in duplicate) of plant specimens and data on 223 ethno-botanical uses were collected from different tribal group (Kondha, Sabar, Sora, Munda and Bhuinya) of Buguda and Sorada forest Ranges of Ghumusar South Forest Division. Information on medicinal uses (151 nos.), insect repellants (4nos.), rope making (2nos.), veterinary uses (2 nos.), plate making etc. were documented.



Collecting data from tribal herbal healer



Making plate from leaves of 'Sal'



Preparation of medicine in indigenous method



A wooden vessel made from trunk of *Schleicheria oleosa*



Cleistanthus collinus - leaf paste used for pest control



Barleria strigosa - stem used as toothbrush



Eugenia reinwardtiana, a host plant of Common banded peacock butterfly



Gymnema montanum — a new distributional record for Odisha

From the previous tour collections, 45 plant species of Deogarh district, Odisha were identified by Dr. Harish Singh, Scientist-'C' & HoO, Sri P.K. Baske, Botanist and Dr. Dhole Pankaj Arvind, Bot. Asst.; 15 plant species of Jajpur district, Odisha were identified by Sri P.K. Baske. 80 ethno-botanical information Deogarh district were documented in prescribed format by Dr. Harish Singh; 60 ethnobotanical information Jajpur district by A.C. Halder, 62 information of Ganjam district by Nagaraju Siddabathula and 159 information of Deogarh district by Dr. Dhole, P.A. and Sri R. Saravanan.

Visitors/students

Students and Teachers from Calcutta Madarsa, Kolkata and Dhing College, Nagaon, Assam visited the CBL, to whom activities and ethno-botanical exhibits were explained.

INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

In connection with the database of herbarium of ISIM (BSIS), 365 dicot and 232 monocot herbarium specimens as well as 234 specimens collected by I. H. Burkill were completed. 37 unidentified members of Poaceae were also authenticated during this month.

Under e-Governance project (Photographic Digitization Project of Economic Herbarium specimens at ISIM, CNH & CBL, Kolkata) out of 16,000 herbarium specimens digitized, quality check report of 8000 photographs were completed.

Visitor

Ms. Helen Bradley, Museum Development Officer, Llandudno Museum U.K., visited Botanical gallery on 21st November 2014.



Ms. Helen Bradley during her visit at Botanical Gallery, ISIM

Publications

Datta, S., Chakraborty, T. and Sinha, B. K. 2014. Note on the status of *Boeica griffithii* C. B. Clarke (Gesneriaceae). *J. Econ. Taxon. Bot.* 38 (2) : 237–240.

Roy, D.K. , Talukdar, A.D. Dutta Choudhury, M. and Sinha, B. K. 2014. Diversity in Angiosperm Flora of Siju Wildlife

Sanctuary, South Garo Hills District of Meghalaya, India. *Indian J. Pl. Sci.* 4(3): 87–101.

Talukdar, A. D., Roy, D.K., Sinha, B.K and Dutta Choudhury, M. 2014. *Sauromatum meghalayense* (Araceae): Tribe-Araee, a new species from Meghalaya, India. *NeBio* 5(3): 1–3.

ANDAMAN AND NICOBAR REGIONAL CENTRE, PORTBLAIR

Dr. C. Murugan, Scientist 'D' & HoO identified 132 plant specimens belonging to 33 species from the earlier collections in connection with the Flora of Rani Jhansi Marine National Park. Similarly, Dr. M. Y. Kamble, Scientist 'C' identified 27 species from 29 Field numbers. In connection with the Lichens of Nicobar Islands, Dr. T.A.M. Jagadeesh Ram, Scientist 'C' studied chemistry of 160 specimens by TLC method and identified 22 specimens belonging to the 6 species.

For the ongoing project, Phenological Survey of Dhanikari Experimental Garden–cum–Arboretum, phenology of 15 tree species were recorded from the Garden–cum–Arboretum, Nayashar by Dr. Lalji Singh, Scientist 'C'.



Oropetium thomaeum— a new generic record for Andaman and Nicobar Islands



Phalanopsis speciosa—an interesting orchid



Miliusa andamanica



Ixora rosella

Digitization of Herbarium

258 herbarium sheets belonging to seven families were scanned for development of virtual herbarium at PBL.

Public service rendered

Dr. Lalji Singh, acted as a jury member for Evaluation of the Projects for National Children's Science Congress (both District and State Level) at Shiksha Sadan, and Teacher's Home, Directorate of Education, Andaman and Nicobar Islands, on 08.11.2014 and 15.11.2014 respectively.

Lecture delivered

Dr. C. Murugan, Participated in the inaugural function of Botanical Forum at the Department of Plant Science, JNRM, Port Blair on 21.10.2014 and delivered a lecture on "Plant Diversity of Andaman and Nicobar Islands".

Visitors/students

Dr. T.G. Apaarna, Asst. Prof., Department of Environmental Study, JNRM, Port Blair along with other Teaching Staff and 100 Students visited Dhanikari Experimental Garden-cum-Arboretum. Other dignitaries, who visited the garden are: Shri. G.T.N. Dhas, Secretary, Science & Technology and Environment, Smt. Punya Srivastava, Secretary and Sri. P. Viswakannan, Director, Tourism; Sri D.M. Shukla, Addl. PCCF; Sri. Dharmendra Kumar, Director, Sports; Shri S. K. Sinha, Secretary, Nature Club and Shri A.K. Sharma, Co-ordinator, Nature Club.

Publication

Thangavel, P., John Britto, S., Prabhu, S. and Senthil Kumar, S. 2014. In vitro callus induction and plantlets regeneration from leaf explants of *Plectranthus barbatus* Andrews - a valuable medicinal plant. *Int. J. Adv. Sci. Eng.* 1(2): 51-57.

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Dr. S. Borah, Botanist undertaken an exploration tour to Lohit District for more than 20 days and vouched 278 field numbers. Dr. R. Gogoi, Scientist 'D' and Sri B.B.T. Tham, Botanist made a field exploration tour from the 3rd week of October to 2nd week of November to Pakke Tiger Reserve and Wild Life Sanctuary, West Kameng, Arunachal Pradesh and collected eight species of *Impatiens* and 141 Field numbers of other angiosperms. Dr. M. K. Kandwal undertook a field tour to Lower Subansiri district from the middle of November for a fortnight and collected specimens of 110 field numbers.

One herbarium consultation tour was conducted by Dr. M. Bhaumik, Scientist 'D' to BSI, ERC, Shillong (ASSAM), where Dr. Bhaumik identified 27 field numbers, .

Visitors/Students

60 students of Good Shepherd School, Naharlagun visited this regional centre on 03.11.2014.

Meeting and function attended

Dr. P. Satyanarayana, Scientist 'D' & HoO attended the Award Ceremony of State Level painting competition on Energy Conservation-2014 held at the State Banquet Hall, Itanagar on 15.11.2014.

Dr. Satyanarayana, also attended as an invited member to the Second National Consultation to discuss development and monitoring strategies under Brahmaputra Salween Landscape Conservation and Development Initiative (BSLCDI) on 17 & 18th November 2014 at Itanagar, Arunachal Pradesh, organized by G.B. Pant Institute of Himalayan Environment & Development (GBPIHED), North East Unit with financial support from International Centre for Integrated Mountain Development (ICIMOD).

Funded Project

Dr. P. Satyanarayana, Principal Investigator of funded project entitled, "Creation of Biodiversity Park and Plant Repository

for Conservation & Propagation of Species for Educational Purpose", at NHPC, Gerukamukh, Assam, conducted a walk-in-Interview on 10.11.2014 for the selection of one position of Junior Research Fellow and one position of Field Assistant. Dr. Satyanarayana also visited the Orchidarium at Raj Bhawan, Itanagar on 11.11.2014 and Orchid Research Centre, Tipi & Sessa on 16.11.2014 in connection with this funded project.

Prize distribution for Hindi Pakhwada/ Saptah Winners

Prizes were distributed to winners of the different competitions held during September 2014 in connection with the Hindi Pakhwada/ Saptah.



Distribution of prizes to the winners of the Hindi Pakhwada / Saptah competition by the Head of the Office of AZRC, BSI, Itanagar, Arunachal Pradesh



Publications

Pathak, M.K., Bhaumik, M. and Krishna, G. 2014. A new species of *Adinandra* (Pentaphragmaceae) from India. *Edinburgh J. Botany* 71(3): 379-383.

Rawat, V.K. 2014. Parnang: Pratham Sthilya Paudho Ka Samuh. *Vanaspati Vani* 23: 60–62.

Rawat, V.K. and Satyanarayana, P. 2014. Bio-Diversity and Biosphere Reserve. *Vanaspati Vani* 23: 112–114.



**Subalpine
vegetation
in West
Siang
District of
Arunachal
Pradesh**

ARID ZONE REGIONAL CENTRE, JODHPUR

The following plants were introduced in the botanic garden of BSI, AZRC collected from Reang, West Bengal and Dang district, Gujarat.

Medicinal plants

Amomum subulatum, *Kaempferia galanga* and *K. rotunda* procured from Reang, West Bengal.

Ornamental plants

Aerides multiflora and *Canna indica* (Yellow), collected from Dang district, Gujarat.

Meeting/conference attended

Sri Vinod Maina, Scientist 'C' & HoO attended "Research Advisory Group meeting"(RAG) on 13th & 14th November 2014 at AFRI, Jodhpur.

Sri M. K. Singhania, Botanist, attended and presented a poster entitled "Diversity of Cultivated Plants of Rajasthan" in National Conference on Biodiversity: Harmonizing Conservation with Life and Landscape of Arid and Semi-arid Areas organized by the IIS University, Jaipur.

Publication

Meena, S. L., Hari Krishna, P., Jadav, C. R. and Maina, V. 2014. A new generic record to the Gujarat State (India): *Spigelia anthelmia* L. (Loganiaceae). *J. Econ. Taxon. Bot.* 38(2): 340. 2014.



***Spigelia anthelmia*—new generic record to Gujarat**

BOTANIC GARDEN OF INDIAN REPUBLIC, NOIDA

Development and Maintenance Work of the Garden was carried out under the supervision of Dr. Sheo Kumar, Scientist 'D' through Garden Supervisor and Staff, which include plantation of 45 winter annual species in beds for beautification and landscaping. Further, more than 3800 seedlings of 21 species were planted in pots for beautification. Besides, 4350 seedlings of 17 Winter Annual plants were provided to AJCBIBG, Howrah for plantation.

Meetings Attended

Dr. Sheo Kumar attended a meeting with Dr. R. Dalwani, Advisor, MoEF & CC and Executive Engineer, CCU at BGIR on 14.11.2014 in connection with the development of Water bodies in the Garden.

Visitors/Students

About 900 persons visited the Garden during this month, which include 646 students and 54 teachers and 29 foreigners.

CENTRAL REGIONAL CENTRE, ALLAHABAD

In connection with the ongoing projects on floral diversity of Upper Ganga Ramsar site, Uttar Pradesh, Flora of Chhattisgarh, Floristic diversity of Parvati Aranga Wildlife Sanctuary and adjoining Tikri forest area, Gonda, U.P. a total of 76 species with different field numbers were identified. Similarly, for the Systematic studies on the lichen flora of Kerala, Revisionary studies on the family Pertusariaceae as well as Roccellaceae; Taxonomic studies on lichenised non thelotremoid Indian Graphidaceae, 20 specimens were identified. In addition, a total of 366 specimens collected earlier were also identified.

In connection with the Revisionary studies on Tribe Helianthae (Family Asteraceae) Sri Jeetendra Kumar Vaishya, SRF carried out a herbarium consultation tour to SRC, BSI, Coimbatore. Sri Vaishya studied 388 specimens and collected 15 specimens related to tribe Helianthae from Shervoroy hill area.



Magnificent fruit of *Annona muricata* – a potential anti-cancerous plant being grown in the garden

Visitors /students

Prof. S. K. Chaturvedi, Dean & Head, Department of Botany, Guru Ghasidas University, Bilaspur (Chhattisgarh) visited on 12.11.2014 for herbarium and library consultation.

A group of 18 students of M.Sc. (Botany) accompanied by two Professors from Rana Pratap P.G. College, Hardoi, U.P., a group of 48 students of M.Sc. (Botany) accompanied by three Professors from D.B.S. College, Kanpur, U.P. and a group of 30 students from B.H.M.S, Lal Bahadur Shastri State Homeopathy College, Allahabad visited the garden, herbarium and Library of this regional centre on 20.11.2014, 24.11.2014 and 26.11.2014 respectively. The scientists of the Centre delivered lectures on Herbarium Methodology, Lichens and on Palynology to all the above groups for general awareness.

Publication

Vaishya, J. K., Ansari, A. A. and Dubey, N. K. 2014. Status of *Xanthium inaequalatum* DC. (Asteraceae). *Biohearld* 4(1): 7-9.



Students of B.H.M.S. taking notes in the garden at CRC during interaction

DECCAN REGIONAL CENTRE, HYDERABAD

One field tour was conducted by Dr. M. Sankara Rao to Vempalli Forest Range for about 10 days from 2nd week of November and covered 7 forest beats in connection with the 'Flora of Seshachalam Biosphere Reserve'. Dr. Rao collected specimens of 81 field numbers and identified 20 field numbers.

In connection with the Flora of Kawal Tiger Reserve Sri J. Swamy, Bot. Asst. and Ms. P.S. Annamma, JRF, conducted a field tour for a week to Nirmal Forest Division of Kawal Tiger Reserve and collected specimens of 122 field numbers.

Similarly, a fortnight tour was conducted to Purunakote, Jilinda and Tikrapada ranges of Satkosia Wildlife Sanctuary, Odisha by Sri Chandramohan, JRF and vouched 96 field numbers and identified four species

Dr. K. Prasad, RA conducted field tours to Munnar, Kerala; to Yercaud, Tamil Nadu and to Talakona, Andhra Pradesh for about 20 days in connection with the "Studies on taxonomy, phytogeography and conservation of South Indian Habenaria (Orchidaceae)".

Dr. L. Rasingam conducted one day field trip to Marikal areas of Mahboobnagar district on 14th November 2014.

Public service rendered

Identified one plant species brought for identification by the Pharmacy college students in connection with their dissertation.

Meeting/Function attended

Dr. M. Ahmedullah, Scientist 'D' participated in the consultative meeting of National Biodiversity Authority for Normally Traded Commodities on 13th November 2014 at Hyderabad.

Dr. L. Rasingam, Scientist 'C' attended the book release function of Genetically Engineered Crops in Developing Countries organised by Foundation for Biotechnology Awareness and Education, Bangalore (FBAE) on 12th

November 2014 at Centre for Economics and Social studies, Hyderabad.

Sri J. Swamy, Bot. Asst. delivered lecture on "Biodiversity of Pocharam Wild Life Sanctuary, Telangana State" and demonstrated "Herbarium Techniques" in District level seminar and workshop on "Recent Trends in Plant Taxonomy & Biodiversity Conservation" on 28th October, 2014 at Govt. Degree College, Kamareddy, Nizamabad.

Participated in Science festival

Exhibited BSI stall in "Science festival" at Sancta Maria International School, Hyderabad held on 6th and 7th November 2014.

EASTERN REGIONAL CENTRE, SHILLONG

During the period, Scientists and Scientific staff identified 51 and documented 20 species and conducted field tours, in connection with the different Floras (Murlen National Park, Mizoram; Amchang Wildlife Sanctuary, Assam; South Garo Hills Dist., Meghalaya; Laokhowa Wildlife Sanctuary, Assam; Yangoupokpi Lokchao Wildlife Sanctuary, Manipur; Eastern Nagaland).

In connection with the bryophyte projects, Dr. S.K. Singh, Scientist 'D' collected about 500 samples of Liverworts and hornworts in November 2014 from different part of East Khasi Hills and Jaintia Hills.

In connection with the *ex-situ* conservation of Endemic, threatened and economically important plants of the region and recording phenological data on flowering and fruiting species growing in EBG, Barapani 11 plant species were observed and recorded phenological data.

Micro-propagation of RET species

For project related to Micro-propagation of RET species of NE India, *Ilex khasiana* set up an experiment for multiple shoot induction by using different concentrations of plant growth regulator (BAP); for *Cymbidium tigrinum* MS media prepared and subculture was done. Cultures established *in-vitro* are being maintained; for *Armadorum senapatianum* MS media prepared with addition of charcoal and Subculture done at regular period, observations were recorded at regular

intervals, 200 plantlets were transferred to greenhouse; for *Rhododendron coxianum* subculture was done and data recorded and set up experiment for multiple shooting using PGRs.

For project related to Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of selected species of NE India, fresh cultures of *Paris polyphylla* in MS medium was done with different plant growth regulators for shoot induction experiments. Multiple shoot induction experiment was initiated with *Cheilocostus* sp. in plain nutrient medium. Preliminary qualitative phytochemical analysis was completed with the leaf samples (hot water extract) of *Citrus latipes*.

Public service rendered

Identified about 35 samples of specimens received from various institutions.

Visitors/students

Two Scientists, 22 Professors, five Research Scholars, 353 Students and 2 Teachers visited from various Institutions, Colleges and Universities.

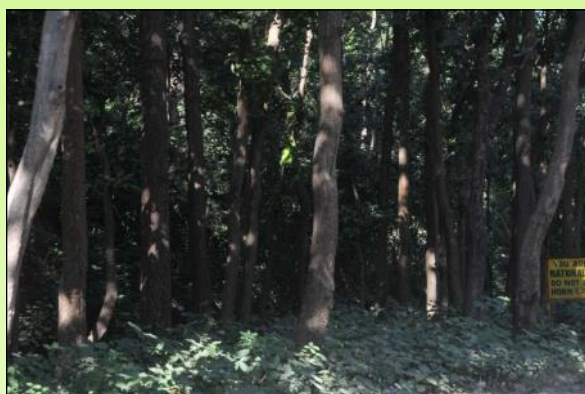
Publication

Singh, S.K. 2014. An Appraisal of Genus *Riccia* in India with a note on diversity and distribution of species. *Int. J. Sustainable Water and Environ. Systems*. 6 (1): 35–43.

NORTHERN REGIONAL CENTRE, DEHRADUN

Dr. A. N. Shukla, Bot. Asst. conducted a field tour to the Kalesar National park for about 10 days and collected specimens of 100 field nos. and made ecological studies in 7 compartments.

Dr. K. Ambrish, Scientist 'C' conducted a field tour to the Nandhour Wild Life Sanctuary for 10 days and vouched 202 field numbers (ca 580 specimens) along with 2 RET live plants, which were introduced in the garden for ex-situ conservation.



Kalesar National Park -Sal Forest



A view of Nandhour Wild Life Sanctuary



Clerodendrum indicum collected from Nandhour WLS

Sri Amber Srivastava, JRF (DBT) conducted one day field trips to Sahastradhara to check the survival rate and growth of planted saplings of *Pittosporum eriocarpum*; to Haridwar for locating the population of *Catamixis baccharoide*.

Scientists of this centre Identified 89 species and prepared description for 91 species of Angiosperm in connection with the Floras of Uttarakhand and Kalesar National Park, Nandhour Wild Life Sanctuary, Sonanadi Wildlife Sanctuary, Floristic Diversity and Phytosociological study of Simbalbara National Park, Pteridophytes and Bignoniaceae-Revisory study on the of Tree ferns of India and genus *Lepisorus* in India.

Public service rendered

Drs. S.K. Srivastava, Scientist 'D' & HoO and P.K. Pusalkar, Scientist 'D' supplied information on the authentication and authority of ca 150 species to Samvedi, an NGO working for Uttarakhand Biodiversity Board.

Dr. P.K. Pusalkar, Scientist 'D' helped Sri Rohit Kumar, Research Scholar of Panjabi University Patiala in identification of 120 specimens of flowering plants collected from Uttarakashi district, Uttarakhand.

Dr. R. Manikandan, Scientist 'C' assisted in identification about 45 species collected from Jharkhand for two Ph.D. students from FRI, Dehradun

Identified 30 species obtained from students, research scholars of various Institutes and Universities.

Visitors/students

30 M.Sc. students from Dolphin Institute of Natural Sciences, Dehradun and two students from Punjabi University, Patiala visited BSD Herbarium and Botanic Garden.

Hindi workshop

The centre has organized and observed 'Hindi Karyashala'. Padmashri Liladhar Jaguri has been invited as a special guest for this function.



Padmashri Liladhar Jaguri speaking during Hindi Karyashala

Publications

Madhukar V.K. and Srivastava S.K. 2014. *Oroxylum indicum* (L.) Benth ex Kurz (Bhootvriksha): Ek Bahupaogi Aushadhiya Vriksha. *Vanaspati Vani* 24: 75-76.

Kholia, B. S. 2014. Harit arthvyavastha aur Bharat. *Vanaspati Vani* 24: 110-111.

Srivastava, S.K., Pusalkar, P.K. and Shukla A.N. 2014. Kedarghati – Prakritik aapda ka vanaspatiyon par prabhav ka ankalan. *Vanaspati Vani* 24: 07-13.

Ambrish, K .and Srivastava, S.K. 2014. Champawat jile ke pramukh van avam vanaspatiyon : Ek Avalokan. *Vanaspati Vani* 24: 14-17.

Mishra, D., Sharma, J.R. and Uniyal, B.P. 2014. Andaman & Nicobar Dwip samuh me kasht ko vilgit karne vale kavakon ki vividhata. *Vanaspati Vani* 24: 45-46.

Joshi, P., Singh, B.K., Kholia, B.S. and Srivastava, S.K. 2014. Parnangon ka vibhinna padap samuhon avam jeevon se parasparik sambandh. *Vanaspati Vani* 24: 53-56.

Deroliya, P.K., Kumar, B. and Srivastava, S.K. 2014. Parnang Marsilia – Ek Parichaya. *Vanaspati Vani* 24: 57-59.

Tiwari, A., Shukla, A.N. and Srivastava, S.K. 2014. Satawar ki kheti. *Vanaspati Vani* 24: 80-81.

Kumar, A., Debta, M.R. and Srivastava, S.K. 2014. Bhartiya vedik sanskriti me jaivvividhata evam dharmik yaggyon me prayukt hone wali vanaspatiyon ka veigyanik mahatva. *Vanaspati Vani* 24: 89-93.

Pramanik, D.D., Srivastava, S.K. and Uniyal, S. 2014. Uttarakhand me paye jane wali Ficus vansh ki jatiyon ka lok vanaspatik oopyog. *Vanaspati Vani* 24: 97-102.

Manikandan R. and Deroliya, P.K. 2014. Govind pashu vihar

vanya jeev abhayaranya, Paschimi Himalaya ke aarthik Mahatva ke Paundhe. *Vanaspati Vani* 24: 103-106.

Panwar, G.S. 2014. *Eremostachys superba*: Ek sanktapann, Aushdhiya evam sajawati shak. *Vanaspati Vani* 24: 115-118.

Singh, R.K. 2014. Aflatoxin: Ek ghatak kavak vish. *Vanaspati Vani* 24: 119.

Pusalkar, P.K. 2014. Vishmayakari vanaspati jagat ki rochak jankariyan. *Vanaspati Vani* 24: 141-143.

Kumar, A. 2014. Pipal. *Vanaspati Vani* 24: 151.

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

In connection with the project, Red listing of Orchids of Eastern Himalaya as per IUCN criteria, 43 orchid species were identified by Dr. Dinesh Kumar Agarwala, Scientist 'C'. Morphological characterization and illustration of habit and floral parts were also prepared with the help of digital photographs. 139 specimens at BSHC were finalized in respect of their identity, geo-coordinates and data entry in excel sheet.

For the ongoing project, family Rubiaceae for Flora of India (Amplification of the description of ca 65 poorly known species supplemented with illustration and possible photographs), illustration and description of 12 species were completed by Dr. Mohan Gangopadhyay, Scientist 'D' & HoO. A local field tour was conducted to Namchi, Ravangla and Kewzing area, South district of Sikkim and collected 20 field numbers of specimens of by Dr. Gangopadhyay.

Apart from the above projects, Phenology of 50 EET plants in the office campus garden was also recorded weekly.



Inula hookeri



Paris polyphylla



Rhododendron ciliatum



Sambucus adnata

Visitors

43 visitors visited during this month for consultation of herbarium and library of this regional centre.

Meeting/workshop attended

The Scientists and Scientific staff of this centre participated in inauguration and closing of Vigilance Awareness Week celebration at ARRI, Gangtok; CAMP workshop of SMPB, Sikkim.

Publications

Agrawala, D.K. and Singh, P. (2013) 2014. Legislations for orchid conservation in India and development of National Red list as per IUCN criteria. *J. Orch. Soc. India* 27(1-2): 27-35.

Agrawala, D.K. and Chowdhery, H.J. (2013) 2014. Phenology, distribution pattern, endemism and phyto-geographic affinities of the genus *Eria* Lindl. (Orchidaceae) in India. *J. Orch. Soc. India* 27(1-2): 53-60.

SOUTHERN REGIONAL CENTRE, COIMBATORE

One field tour was conducted to Point Calimere Wildlife Sanctuary for a week by Dr. G.V.S. Murthy, Scientist 'F' & HoO, Dr. S. Kaliamoorthy, Scientist 'C' and Sri Yarrayya Kondru and vouched 98 field numbers.

One field tour to the Srivilliputhur Grizzled Giant Squirrel Wildlife Sanctuary, Tamil Nadu was conducted by Dr. K.A.A. Kabeer & Mr. G. Gnanasekaran for 10 days and specimens of 147 field numbers were collected.

In connection with the project, *Ex-situ* conservation of endangered and threatened plants, Dr. S. Kaliamoorthy, Mr. B.S. Elango, Garden Supervisor and Mr. T.S. Saravanan conducted one field tour to Agasthiyamala Biosphere Reserve Forest for a week and collected 17 Orchid taxa (42 samples) and introduced at National Orchidarium & Experimental Garden (NO & EG), Yercaud. Besides, multiplied 109 samples (including 12 samples of 3 endemic orchids) and transplanted 7 samples, and developed seedlings (42), cuttings (54), repotted (8) and recorded the phenology of 15 species including 5 orchids and 10 species of angiosperms in the garden.

Scanning Electron Microscopy

Sri G. Gnanasekaran, Bot. Asst. Taken 15 SEM images of the leaf surface and seeds of the genus *Andrographis* (Acanthaceae). He also scanned seeds of two species of *Festuca* spp. for Ms. Sutrishna Kar, SRF, BSI (Hqrs.), Kolkata. Sri J.V. Sudhakar studied 3 *Ficus* taxa by utilizing SEM installed at SRC, Coimbatore.

Public service rendered

Sri J.V. Sudhakar and Sri G. Gnanasekaran, Bot. Assts. delivered 2 lectures to the PG students of the Dept. of Plant Genetic Resources, TNAU, Coimbatore. They also conducted one day field trip to Top slip in Anaimalai Tiger Reserve (ATR), Coimbatore District, Tamil Nadu.



Topslip field trip with students of TNAU PGR

26 plant samples were identified during this month and the authentication certificates were provided to the researchers of various institutes in connection with their research work. Besides, 138 pages of photocopies of literature were also supplied to the researchers visited to SRC to consult the Library.

Visitors/students

70 persons including research scholars, scientists, professors, lecturers, UG and PG students consulted SRC herbarium and library whilst a total of 648 persons in 90 parties visited NO & EG, Yercaud.

Training Programme Organised

A 5-day training programme in *Digitalization of Herbarium Database* was conducted from 10th to 14th November, 2014 for 5 Scientists of the Dept. of AYUSH, Ministry of Health. Similarly, one day training was given to Ph. D. students of the Dept. of Plant Breeding, TNAU about Herbarium methodology.

Training attended

Sri. S.K. Yadav, Bot. Asst. and Sri U.V. Shrivastava, JHT were deputed to attend the 5-day Rajbhasha training programme '*Basic Training Programme for use of Hindi on Computer*', conducted by the Dept. of Official Language, Ministry of Home Affairs from 10th to 14th November, 2014 at Central Excise & Customs Office, Coimbatore.



Participants of the training Programme of Digitisation

Publications

पलनिसामी, एम. एवं एस.के.यादव, 2014. "केरल की समुद्री शैवाल विविधता: एक अवलोकन" *वनस्पति वाणी*, अंक 23: 50-52.

यादव, एस.के. एवं एम.पलनिसामी, 2014. "भारतीय शैवाल अनुसंधान के क्षेत्र में प्रो. एम. उमामहेश्वर राव का योगदान" *वनस्पति वाणी*, अंक 23: 146.

बैजमिन, जे.एच.फ्रांक्लिन, के. अल्लाफ़ अहमद कबीर एवं एस.के. यादव, 2014. "साइटिस परिशिष्टों में सूचीबद्ध भारतीय पौधों का व्यापार: नियंत्रण एवं नियमन" *वनस्पति वाणी*, अंक 23: 107-109.

WESTERN REGIONAL CENTRE, PUNE

Dr. A. Benniamin, Scientist 'D' & HoO and Sri D. Tripathi, JRF conducted one week field tour to Kudremukh National Park for collection of pteridophytic flora.

Dr. J. Jayanthi, Scientist 'C' conducted a field tour to BRT Wildlife sanctuary, Karnataka for a week to inventorise the angiosperm flora.

Ms. Prajakta S. Pathare, SRF. has conducted one plant exploration tour to Koyna Wildlife Sanctuary during this month under the project "Floristic diversity of Koyna Wildlife Sanctuary, Maharashtra".

Dr. J.S. Jalal, Scientist 'C' undertaken one herbarium consultation tour to BLATTER Herbarium, St. Xavier's College, Mumbai in the last week of November and studied a total of 374 specimens of orchids belonging to 93 species. 15 determinavit slips were pasted by Dr. Jalal on the misidentified specimens.



**View of scrub forests at
BRTWLS**



Solanum seaforthianum



Salix tetrasperma



**View of Nageshwar peak,
Koyna WLS**



**Dense undergrowth of
Strobilanthes in Koyna WLS**



Polypleurum stylosum

During this month, 26 field numbers of angiosperm specimens from Biligiri Rangaswamy Temple Wildlife sanctuary and Koyna Wildlife sanctuary were identified; descriptions were made for five orchid species in detail and colour illustrations were prepared for three orchid species; five pteridophyte specimens and 17 fungi species were also identified by the scientists & researchers of this regional centre.

Public service rendered

Identification and authentication of plant specimens were done for 33 research students, B. Pharm. and M. Pharm. students.

Conference attended

Dr. A. Benniamin, Scientist 'D' & HoO and Dr. Rashmi Dubey, Scientist 'C' attended the 37th Indian Botanical conference on theme "Biodiversity and Climate change" held at V.G. Vaze College, Mumbai during 7th -9th Nov. 2014,



**37th Indian Botanical conference on theme "Biodiversity
and Climate change"**

Visitors/students

About 150 persons visited the herbarium, library and museum. and library Important ones to mention are: Dr. M.D. Kajale, Archeological Survey of India, Pune, Dr. V.P. Prasad, Scientist 'D' from Central National Herbarium, BSI, Howrah, and students from Omni Active Health Technologies (Thane).

Publications

Dubey, R. and Moonambeth N.A. 2014.. *Sheathnema indicum* gen. et sp. nov.- a new sooty mold fungus from northern Western Ghats, India. *J. Threat. Taxa* 6(12): 6549-6555.

Jalal, J.S., Jayanthi & P.Kumar. *Eulophia spectabilis*: A high value medicinal orchids under immense threat due to overexploitation for medicinal uses in Western Ghats of Maharashtra, India. *MIOS J.* 15(10): 9-15. 2014.

PLANT OF THE MONTH



Hibiscus tiliaceus L. (MALVACEAE) also known as Beach Hibiscus is a native of Old World Tropics. Commonly distributed in the coastal areas of South East Asia and also planted as avenue tree throughout India.

By Dr. B.K. Singh



Director, BSI addressing during Birth Anniversary Celebration of Dr. E.K. Janaki Ammal (above) and discussing with Dr. Vineeta Damodaran, Univ. of Sussex, England (below)



Distribution of certificates to the participants of Administrative Capacity Building training course

BSI stall in Science festival held at Hyderabad



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