



BSI NEWSLETTER

The monthly electronic newsletter of Botanical Survey of India

Volume 2
Number 1

January 2015

Director's Column

Welcome to the first issue of the second volume of the BSI newsletter. This year we are completing the establishment of 125 years of Botanical Survey of India. On this occasion of the Anniversary, it is planned to invite many eminent scientists and professors from various organizations and universities for series of lectures, which will be useful to the young budding researchers in Plant and Fungal Taxonomy.

In this newsletter you will find some insight into wide range of our research activities, throwing spotlights on our achievements and actions.

In this month final reports on the 'Ferns of Maharashtra', 'Koderma wildlife sanctuary' and Flora of Palkot Wildlife Sanctuary were submitted by the scientists and scientific staff of BSI. Further, BSI officials published total 15 research papers in various journals and 4 popular articles.

Besides, in all the units and regional centers of Botanical Survey of India, the Republic day was celebrated with usual gaiety and enthusiasm. The saplings, especially of the rare and endangered plants were planted in the gardens of Botanical Survey of India.

Happy browsing!

Dr. Paramjit Singh

Director, Botanical Survey of India



Botanical Survey of India
Established in 1890



In connection with the Algal Flora of Jharkhand, Wild mushrooms of Sikkim, Liverwort & Hornwort Flora of Sikkim, Wood rotting fungi of Rajmahal hills and Wood Rotting Fungi of Koderma Wildlife Sanctuary (Jharkhand) identification, writing of description and making of illustrations are being carried out by the scientists and scientific staff.

Public service rendered

Dr. A.B.D. Selvam, Scientist 'D' pharmacognostically studied and authenticated two wood samples of *Pterocarpus santalinus* (Papilionaceae), which were received from Directorate of Revenue Intelligence, Kolkata.

Dr. Selvam uploaded a short scientific note with Photograph on the topic 'Ashoka Chakra root' at www.merineews.com to create awareness among public, which can be viewed at (<http://photos.merineews.com/newPhotoLanding.jsp?imageID=30433>).

Dr. Nihal Aziz, Scientist 'E' attended a meeting of DCM on 15.01.2015 at Indira Paryavaran Bhawan, MoEF & CC, New Delhi.



Nostoc sphaericum (Cyanophyceae)

Training attended

In connection with the maintenance of BSI website Drs. Sudhansu Sekar Dash, Scientist 'D' and Aris Dason, Scientist 'C' attended the training at NIC, New Delhi on 16th January 2015.

Visitors

Dr. K.C. Kariyappa, Research Associate, Bryology Lab., Scottish Christian College, Nagercoil, Tamil Nadu visited cryptogamic section to consult Bryophyte specimens at CAL from 12th to 16th January 2015.

Publication

Das, K. and Chakraborty, D. 2014. *Lactarius vesterholtii*, a new species from India. *Mycotaxon* 129 (2): 477–484.



Rhopalodia gibba var. *minuta* (Bacillariophyceae)



Dr. K.C. Kariyappa consulting Bryophyte specimens at CAL

AJC BOSE INDIAN BOTANICAL GARDEN, HOWRAH

Dr. B.K. Singh accompanied Dr. (Mrs) R. Dalwani, Advisor, MoEF & CC, New Delhi to Sunderbans on 11th and 12th January 2015.

Dr. Pushpa Kumari visited Blatter Herbarium, Mumbai, JNTBGRI, Palode and Rosamalla and adjoining areas in Kerala for herbarium consultation and collection of bamboo specimens and propagules from 19th to 25th January 2015. Nine species of Bamboos collected from Kerala were introduced in Bambusetum in AJCIBBG.

The Great Banyan tree at AJC Bose Indian Botanic Garden produced 10 new prop roots. 22 aerial roots were encaged and old supports are replaced /repaired. 260 old roots are painted with fungicide to restrict fungal attack.



Flowering in *Ochlandra wightii* (Poaceae) collected from Kerala for introduction in AJCIBBG

Public service rendered

Dr. Pushpa Kumari acted as a Judge in the Annual Flower Show at Kamal Nursery, Andul, Howrah.

Republic Day celebration

The 66th Republic Day was celebrated at Curator Office Lawn on 26th January 2015 by hoisting the national flag by the Director, BSI followed by plantation of saplings by scientists and dignitaries. A Hindi documentary film "*Acharya Jagadish Chandra Bose Bharatiya Vanaspati Udyan – Bhoot, Bhawishya aur Vartaman*" was also screened as a part of the celebration.

Visitors/students

Sri Krishna Prasad Dhakal, Acting Ambassador of Nepal and Students of Kerala Forestry College, Mannuthy visited the botanical garden.



Director, BSI addressing the gathering during Republic Day Celebration at AJCIBBG, Howrah



Plantation on Republic day by Director, BSI



Distribution of candies on Republic Day by HoO, AJCIBBG

In connection with Flora of Buxa Wildlife Sanctuary, Flora of Jaldapara Wildlife Sanctuary, Flora of Vikramshila Gangetic Dolphin Wildlife Sanctuary and Flora of Gautam Buddha Wildlife Sanctuary the specimens collected in the previous field tours are being identified. Further, in connection with the Floras of Bihar and Jharkhand, the study of certain families are in progress. The study of Flora of Koderma Wildlife Sanctuary, Jharkhand (150.62 sq. km) by P. Lakshminarasimhan and Shyam Biswa and Flora of Palkot Wildlife Sanctuary, Jharkhand (182.83 sq. km) by P. Lakshminarasimhan and Vijay Mastakar were completed and the reports submitted.

Public service rendered

Identified six digital images of *Ficus curtipes* (Moraceae) for Professor R. Varatharajan, Centre of Advanced Study in Life Sciences, Manipur University, Canchipur, Imphal. Similarly, identified 18 digital images belonging to *Merremia quinquefolia* and *Alocasia macrorrhizos* for Dr. Nagesh, Andhra Pradesh.

Sent six digital images of types of *Piper flavimarginatum*, *Piper rarispicum* and *Piper talbotii* for the study of Ms Rani Asmarayani, Ph.D. Candidate, University Missouri Saint Louis, Missouri Botanical Garden, USA. Also sent two scanned images of type of *Indigofera tirunelvelica* to Dr. M. Sanjappa, CSIR Emeritus Scientist, Botanical Garden University of Agricultural Sciences, GKVK, Bangalore. Similarly, sent two digital images of *Pandanus furcatus* Roxb. (with assistance from P.P. Ghoshal) to Martin W. Callmender, PhD, Missouri Botanical Garden and Conservatoire et Jardin botaniques de la Ville de Genève.

Sent six scanned images of Griffith's collections belonging to *Ixonanthes dodecandra* [= *Ixonanthes icosandra*], *Bouea macrophylla*, *Bouea microphylla*, *Tristania merguensis* and *Corylopsis himalayana* to Dr. Ian Turner, Research Associate, Royal Botanic Gardens, Kew, England.

Supplied scanned pages on *Trichosanthes tricuspidata* from various floras to Dr. K. Narayanan Nair, Principal Scientist, National Botanical Research Institute, Lucknow.

Identified and issued certificates for 23 plant specimens received from different institutes /organizations in connection with their research studies.

Training attended

Dr. V. Sampath Kumar, Scientist 'D' attended training on maintenance of BSI website on 16th January 2015 at NIC, CGO Complex, New Delhi.

Visitors/students

Ms. D. Nandini from FRLHT, Bangalore and Mr. Anup S. Deshpande from Dept. of Botany, Goa University, Punji, Goa visited CNH to consult the herbarium and library.

Students from following colleges visited as a part of their study tour. Govt. Digvijay College, Rajnandgaon, Chhatisgarh (37 students) on 7.1.2015; Bajkul Milani Mahavidyalaya, Purba Medinipur (28 students) on 9.1.2015; Serampur College, Hooghly (22 students) on 9.1.2015; Bhairab Ganguli College, Kolkata (18 students) and Boud Panchayat College, Odisha (8 students) on 14.1.2015; Charuchandra College, Kolkata (10 students) on 15.1.2015; Netaji Mahavidyalaya, Hooghly (5 students) on 19.1.2015; Panskura Banamali College, Purba Medinipur (48 students) on 20.1.2015; Dr. Kanailal Bhattacharyya College, Howrah (70 students) and Rabindra Mahavidyalaya, Hooghly (40 students) on 20.1.2015; Dhalhara Paglimata High School, Paschim Medinipur (50 students) and Tamralipta Mahavidyalaya, Purba Medinipur, (9 students) on 21.1.2015; Narasinha Dutt College, Howrah (15 students) on 22.1.2015; Basirhat College, 24-Parganas (N) (42 students) and Pingla Thana Mahavidyalaya, Paschim Medinipur (15 students) on 27.1.2015; Govt. E.V.P.G. College, Korba, Chhatisgarh (16 students) and City College, Kolkata (50 students) on 28.1.2015; South Calcutta Girls' College, Kolkata (60 students) on 29.1.2015 and Gurudas College, Kolkata (17 students) on 30.1.2015.

Publication

Kar, S., Dey, S. and Singh, P. 2015. Epitypification of *Festuca arundinacea* (Poaceae) . *Phytotaxa* 195(1): 90–93.

CENTRAL BOTANICAL LABORATORY, HOWRAH

An ethnobotanical field tour was conducted to Koraput district, Odisha from 05-01-2015 to 19-01-2015 by Dr. K.A. Sujana, Scientist 'C', Dr. P.A. Dhole, Botanical Asst., Ms. Monika Mishra, Botanical Asst., Sri Amit Diwakar Pandey, Pres. Asst. A total of 243 plant species with 265 ethnobotanical data were collected from different tribal populated village areas of Koraput district (approx. 3000 sq.km) which include 144 ethnomedicinal, 8 veterinary medicine, 17 socio religious, 47 edible, 9 timber, 6 fodder, 5 fuel wood, 4 fiber, 8 bio-fencing, 3 fish catching, 2 glue and other miscellaneous information. Besides, 12 ethno-botanical exhibits were also brought from the study area and displayed at CBL museum.



A view of forest in Koraput district



Bonda lady engaged in making leaf plates

In January 2015, 10 plant species of Deogarh district, Odisha were identified by Dr. Harish Singh, Scientist 'D' & HoO and Dr. P.A. Dhole, Bot. Asst.; 10 plant species of Jajpur district were identified by Sri P.K. Baske, Botanist; 50 plant species of Ganjam district were identified by Sri A.C. Halder and Nagaraju Siddabathula, Bot. Asst. Further, 75 ethno-botanical information of Deogarh district were documented in prescribed format by Dr. Harish Singh and Dr. P.A. Dhole.

Visitors/students

415 students and 28 teachers from Bhairab Ganguly College, Feeder Road, Belgharia, Kolkata; Asadtala Binoda Vidyapith, Nandigram, East Midnapore; Tamralipta Mahavidyalaya, Tamluk, East Midnapore; Panskura Banamali College, Panskura, East Midnapore; Dr. Kanailal Bhtattacharyya College, Ramrajatala, Santragachi, Howrah; Rabindra Mahavidyalaya, Champadanga, Hooghly; Sonamukhi College, Bankura; B.C. College, Boudh, Odisha; Department of Botany, Sikkim University, Gangtok; Department of Botany & Env. Sciences, GNDU, Amritsar, Punjab; Govt. Digvijay College, Rajnandgaon, Chhattishgarh visited the CBL during this month.



Colouring of Floor by using fruits of *Terminalia chebula*



Ms. Monika Mishra collecting data



Sri Amit Pande engaged in data collection



Plant specimens are being identified at CBL



Lecture delivered to students at CBL Museum

Publication

Sunil, C.N., Ratheesh Narayanan, M.K., Nandakumar, M.K., Sujana, K.A., Sreekumar, P.V., Joseph, J.P. and Jaleel, V.A. 2014 *Isachne kannurensis* sp.nov. (Poaceae) —a New species from Lateritic hills of Kannur, India. *Int. J. of Adv. Res.* 2(12): 149—152.

Completed the digital database of 523 dicot and 390 monocot herbarium specimens housed at ISIM (BSIS) and 15 specimens collected by I. H. Burkill along with the relevant field notes.

Under MoEF funded project (Photographic Digitization Project of Economic Herbarium specimens at ISIM, CNH and CBL) quality check of 461 photographs was completed.

Public service rendered

Two plant samples under NDPS Act were identified. Dr. B. K. Sinha, Scientist 'F' & HoO, Dr. A. K. Sahoo, Scientist 'D' and Shri D. L. Shirodkar, Botanist evaluated the infrastructure facilities available in Botanic Garden attached to Botany Dept., Science College of Calcutta University on 6th January 2015 in connection with financial assistance under ABG scheme and submitted inspection report.

MoU signed

Dr. B. K. Sinha, signed MoU with NBCC on behalf of BSI in connection with civil and electrical renovation and modernization work of ISIM building on 9th January 2015. Further, a meeting was also organized on 12th January 2015 at ISIM regarding renovation and modernization work of ISIM building. This meeting was attended by Dr. Dalwani, Advisor, MoEF & CC, New Delhi; Shri Rustagi, Chief Engineer, CCU; Sri Amit Roy, DGM, NBCC; Dr. P. Singh, Director, BSI, Er. A.K. Pathak, Scientist 'F' and Dr. P. M. Padhye, Scientist 'F' & HoO, BSI, Kolkata and Dr. B. K. Sinha, Scientist 'F', ISIM.

Publication

Sinha, B.K., Talukdar A.D., Roy, D.K., Verma, D. and Dutta, C.M. 2014. On the identity and occurrence of *Ormosia robusta* (FABACEAE: SOPHOREAE) in India. *Indian J. Pl. Sci.* 4 (4): 53—57.

ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR

During January 2015, Dr. T.A.M. Jagadeesh Ram, Scientist 'C' identified 23 lichen specimens (belonging to 6 species), Dr. C. Murugan, Scientist 'D' & HoO identified 180 plant specimens (belonging to 39 species), Dr. M. Y. Kamble, Scientist 'C' identified 120 specimens (belonging to 30 species) in connection with 'Lichens of Nicobar Islands', 'Flora of Rani Jhansi Marine National Park' and 'Flora of Trinket Island' respectively.

Dr. Lal Ji Singh, Scientist 'D' recorded phenology of 9 tree species at the Dhanikari Exp. Garden-cum-Arboretum, Nayasahar.

Dr. C. Murugan, Dr. S. Aron, RA and R. Sathiyaseelan, SRF conducted a tour to Great Nicobar Islands from 10.01.2015 to 25.01.2014, collected 196 specimens and completed the study of 24 grids in connection with their project, 'Quantitative Assessment and Mapping of Plant Resources of Nicobar Islands (QAMPRAN)'.

Dr. S. Prabhu, AJCBPDF conducted a tour to Great Nicobar Islands w.e.f. 08.01.2015 to 26.01.2015 and collected 120 specimens under the project, 'Morphological and Molecular characterization of *Memecylon* L. (Melastomataceae) in Andaman and Nicobar Islands, India'.

Public service rendered

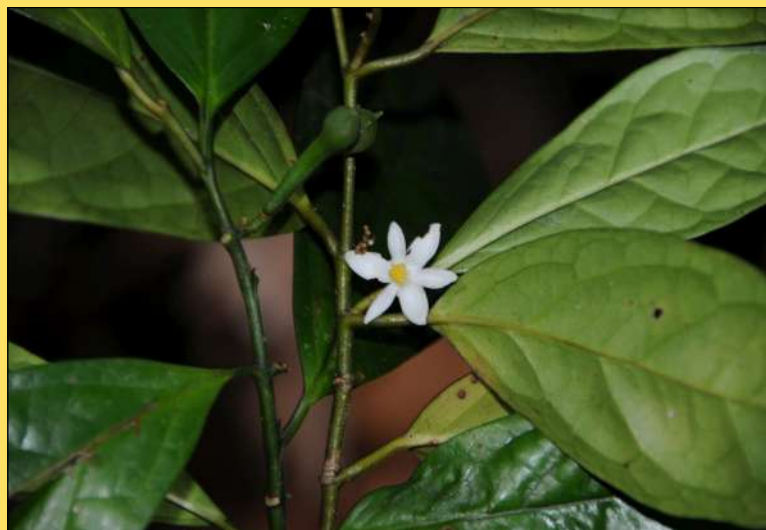
Dr. C. Murugan, Scientist 'D' & HoO, acted as a judge for evaluation of Flower Show organized by Department of Agriculture, Port Blair at Island Tourism Festival ground, Port Blair on 12th January 2015.



Begonia andamanensis (Begoniaceae)



Lumnitzera littorea (Combretaceae)



Anaxagorea luzonensis (Annonaceae)



Phalaenopsis speciosa (Orchidaceae)

Visitors

Dr. T. Balakrishanan, Ministry of Science and Technology, New Delhi along with 9 members visited Dhanikari Experimental Garden on 8th January 2015.

Publications

Jagadeesh Ram, T.A.M and Singh, K.P. 2014. *Dictyonema irrigatum* (Berk. & M.A. Curtis) Lucking, an interesting Basidiolichen from Great Nicobar Island, India. *Indian J. Forest.* 37(3): 361—363.

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Dr. Manas Bhaumik, Scientist 'D' conducted one field tour and collected 260 field numbers belonging to the exploration tour from 16th January 2015 to 2 February 2015 family Polypodiaceae .

and collected specimens of 236 field numbers (including 3 live plants) in connection with 'Flora of East Siang District'.

Dr. Vineet Kumar Rawat, Scientist 'C' visited State Forest Research Institute (SFRI), Itanagar, consulted its herbarium section (Pteridophytes collection) and identified 10 field numbers on 22nd January 2015. Dr. Rawat also conducted a field tour and collected 260 field numbers belonging to the exploration tour from 16th January 2015 to 2 February 2015 family Polypodiaceae .

Dr. Rajib Gogoi, Scientist 'D' identified 3 species, Dr. Manas Bhaumik, identified 3 species, Dr. Manish K. Kandwal, Scientist 'C' identified specimens of 10 field numbers, Shri BBT Tham, Botanist identified specimens of 18 field numbers and Dr. Souravjyoti Borah, Botanist identified specimens of 16 field numbers in connection with their ongoing project works.



A view of Mouling National Park from Lising Village



On way to Mouling National Park through Simang River



***Edgeworthia gardneri* (Thymelaceae)**



***Pyrenaria barringtoniifolia* (Theaceae)**

Visitors/students

Two JRFs (Miss Hage Assung and Hage Asha) of Rajiv Gandhi University, Itanagar visited for herbarium consultation.

Meeting attended

Dr. Manas Bhaumik, Scientist 'D' attended a meeting at Department of Field Publicity, Ministry of Information Broadcasting, Govt. of India, Itanagar as DPC member on 5th January 2015.

Public service rendered

Dr. Manas Bhaumik identified 7 plants (images) for Miss Hage Asha of Rajiv Gandhi University, Itanagar.

Publications

Gogoi, R. and Borah, S. 2015. *Impatiens siangensis* (Balsaminaceae), a new species from Arunachal Pradesh, India. *Phytotaxa* 192 (2): 117–120.

Naithani, H.B. and Kandwal, M.K. 2014. First flowering and nomenclature of a bamboo *Cephalostachyum mannii*. *Indian Forester* 140 (12):1257–1259.

ARID ZONE REGIONAL CENTRE, JODHPUR

In connection with the ongoing project on Shoolpaneshwer Wild Life Sanctuary, Gujarat the specimens collected in previous tours are being identified. The maintenance of species introduced at the garden are being maintained.

Publication

Singhadiya, M.K., Padhye, P.M. and Pandey, R.P. 2014. Floristic diversity of Patan District, Gujarat- Overview. *J. Non Timb. Forest Prod.* 21(4): 241–266.



**A View of Dry Deciduous forest, Nr. Karjan Dam
Shoolpaneshwer WLS, Gujarat**



***Holostemma annulare* (Asclepiadiaceae)**

Dr. Sheo Kumar, Scientist 'D' & HoO updated the existing database of BGIR by consulting several relevant databases. Dr. Kumar also compiled a report on database of Introduced Plants in BGIR (including Medicinal Plants) consisting of 200 species along with photographs.

Dr. Kuldip Singh Dogra, Scientist 'B' collected seeds of eight species, viz., *Annona squamosa*, *Celastrus paniculata*, *Rauvolfia tetraphylla*, *Spondis pinnata*, *Tectona grandis*, *Terminalia arjuna*, *Phyllanthus emblica* and *Vitex negundo*. Dr. Dogra also studied 20 species for its 1st bud initiation, blooming, fruiting and seed setting.

Meeting attended

Dr. Sheo Kumar, Scientist 'D' & HoO attended meeting on finalization of MoU for Joint Development of BGIR by forming a Society under the Chairmanship of the Additional Secretary, Sri Hem Pande, IAS on 16.01.2015 in the Ministry of Environment, Forest & Climate Change.

Republic Day celebration

The 66th Republic Day was celebrated at Curator Office Lawn on 26th January 2015 by hoisting the national flag.

Visitors/students

During this month 120 students, 4 teachers, 4 scientists, 310 Indian nationals and 8 foreigners visited the garden.

News Released

1. लुसप्राय सफेद चंदन को बॉटनिक गार्डन में संरक्षित किया – हिन्दुस्तान, 06.01.2015, पृष्ठ 21 ।
2. Botanic Garden pact next month. The Times of India, 17.01.2015.
3. अगले साल से न्यू लुक में दिखेगा बॉटनिक गार्डन : केन्द्रिय मंत्रालय की मदद से बनेगा रिसर्च सेंटर – नवभारत टाइम्स, 26.01.2015, पृष्ठ 04 ।

CENTRAL REGIONAL CENTRE, ALLAHABAD

In connection with the Revisionary studies on Tribe *Helianthae* (Asteraceae), Sri Jeetendra Kumar Vaishya, SRF, undertaken a herbarium consultation tour to Indian Institute of Science (JCB), Bangalore and Foundation for Revitalisation of Local Health Traditions (FRLHT), Bangalore from 29th December 2014 to 5th January 2015 and studied 39 and 119 herbarium specimens respectively.

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. and Lichens of Rajasthan, Kutch, Gujarat, a total of 81 species with different field numbers were identified. Similarly, for the Revisionary studies on the family Pertusariaceae as well as Roccellaceae; Taxonomic studies on lichenised non thelotremoid Indian Graphidaceae, and lichen of terai region, Uttar Pradesh 21 species were identified. In addition, a total of 263 specimens collected earlier and housed at BSA were also identified.



Staff of BSI interacting with the college Students at Botanic Garden, Allahabad

Visitors/students

A group of 50 students of B.Sc. Biology led by Dr. A.K. Jaiswal and Dr. Dipti Kumar of S.P.M. Degree College, Phaphamau, Allahabad visited herbarium and associated Botanic garden of CRC on 19th January 2015. A group of nine M.Sc. Botany students led by Dr. Shweta Shekhar, Asst. Professor, Botany Department, H.N. Bahuguna P.G. College, Naini, Allahabad visited herbarium and associated Botanic garden of CRC on 28th January 2015. To the visited students briefed about Herbarium Methodology, Palynology and Taxonomy by Dr. G.P. Sinha, Scientist 'E' & HoO and Dr. Arti Garg, Scientist 'D'.

Public service rendered

Identified 16 herbarium specimens received from Govt. Model Science College, Gwalior, M.P. into 16 species. Authenticated an angiosperm specimen received from Sri Harpreet Singh, Asst. Professor, IFTM University, Moradabad, U. P.

Dr. M. Sankara Rao, Pres. Asst. carried out a field tour to West Godavari district of Andhra Pradesh from 13th to 23rd January, 2015 and covered four sacred groves viz., Gubbala mangamma, Gadidaboru, Jeelakarra gudem and Perantalli palli and collected specimens of 46 field numbers.

Dr. L. Rasingam, Scientist 'C' conducted one Herbarium Consultation Tour to S.K. University, Ananthapur from 5th to 8th January 2015 and noted down the specimens collected from Nagarjunasagar Srisailem Wildlife Sanctuary (Tiger Reserve) for 22 families.

Symposium attended

Dr. P. Venu, Scientist 'F' and Dr. P.V. Prasanna, Scientist 'F', Dr. K. Prasad, AJCBPDF, Sri Alok Chorghe, SRF attended a National Symposium on "Conservation of Nature and Natural resources" at Wanaparthi, Mahabubnagar district, Telangana on 22nd January 2015. Dr. K. Prasad presented a paper entitled, "Endemism in the Orchidaceae of Peninsular India" and was awarded Gold medal for best oral presentation in that symposium. Mr. Alok Chorghe, SRF also presented a paper entitled

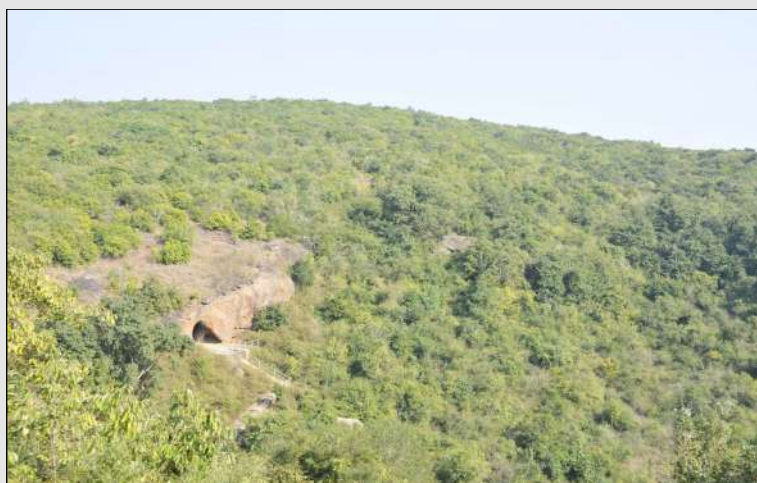
"Chasmophytic grasses of Odisha state" in the symposium.

Publication

Prasad, K., Bheemalingappa, M. and Ravi Prasad Rao, B. 2014. *Dendrobium kratense* (Orchidaceae): a new record for India from Andaman Islands. *Rheedea* 24(2): 131–133.



Dr. Sankara Rao collecting local information about the Gubbalamangamma Sacred grove



Jeelakarra Gudem sacred grove at West Godavari district, Andhra Pradesh



Celastrus paniculatus (Celastraceae) in Nagarjunasagar Srisailem WLS (Tiger Reserve), Andhra Pradesh



Dr. Venu addressing at a National Symposium at Wanaparthi, Mahabubnagar Dist., Telangana



Dr. K. Prasad receiving Gold Medal and Certificate for best oral presentation at a National Symposium

EASTERN REGIONAL CENTRE, SHILLONG

Review of literatures and processing of collected herbarium specimens is in progress for the Floras of Murlen National Park, Mizoram; Amchang Wildlife Sanctuary, Assam; South Garo Hills Dist., Meghalaya; Laokhowa Wildlife Sanctuary, Assam; Yangoupokpi Lokchao Wildlife Sanctuary, Manipur and Eastern Nagaland. During this period identified 169 species and documented 69 species.

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 of species growing in EBG, Barapani Experimental garden, observed and recorded phenological data of 10 plant species growing in the garden.

Micro-propagation of RET species

For project related to Micro-propagation of RET species of NE India, 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 observations were recorded at regular intervals. For *Rhododendron coxianum*, subculture was done and data recorded; also set up experiment for multiple shooting using PGRs. For *Paphiopedilum hirsutissimum*, set up experiment for multiple shooting using BA.

For project related to Micro-propagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of

selected species of NE India, for regular maintenance of initiated cultures of *Paris polyphylla* in MS medium is being done with different plant growth regulators for shoot induction experiments. DNA extraction is completed with leaf samples of *Paphiopedilum venustum* (both Meghalaya and Arunachal Pradesh) and leaf samples of *Ormosia robusta* collected from Baghmara and Balphakram National park (Garo hills, Meghalaya). *In vivo* and *in vitro* experiments are being continued with mature seeds of *Pyrenaria khasiana*. Soil sample analysis was completed with the soil collected from Assam-Arunachal border, where *Pyrenaria khasiana* is growing.

Public service rendered

Identified about six samples of specimens received from various institutions.

Visitors/students

Two Professors, Six Research Scholars and Seven Students visited the Centre from various Institutions, Colleges and Universities.

Publications

Kumar, R., Singh, S. K., Sharma, S., Verma, D. and Rao, C.S. 2014. *Arundina caespitosa* (Orchidaceae). An addition to Flora of India from Meghalaya. *Richardiana* 15: 128–134.

Pagag, K. and Roy, D.K. 2014. Additions to the orchid Flora of Meghalaya, India. *MIOS J.* 15(12): 6–10.

Verma, D. and Roy, D.K. 2014. *Ormosia pinnata* (Fabaceae): an addition to Flora of India. *Rheedeia* 24(2).128–130.

NORTHERN REGIONAL CENTRE, DEHRADUN

Amber Srivastava, JRF conducted a field tour to Jammu to mark the suitable localities for plantation of propagated saplings of *Pittosporum eriocarpum*.

Identified 71 species and description made for 70 species of Angiosperm in connection with the Flora of Uttarakhand, Flora of Kalesar National Park, Floristic Diversity and Phytosociological study of Simbalbara National Park, Flora of Nandhour Wildlife Sanctuary, Flora of Sonanadi Wildlife Sanctuary, Revisionary study on the Tree ferns of India and genus *Lepisorus* in India. This study resulted in some interesting findings:

Solidago dahurica (Asteraceae) is reported first time from India; *Corydalis stracheyi* var. *ecristata* (Fumariaceae), *Drymaria villosa* (Caryophyllaceae) and *Juncus allioides* (Juncaceae) are reported for the first time from Western Himalayas; *Solidago dahurica* (Asteraceae), *Corydalis stracheyi* (Fumariaceae), *Juncus allioides* and *Juncus bufonius* var. *congestus* (Juncaceae) is reported new to Himachal Pradesh; *Corydalis stracheyi* var. *ecristata* (Fumariaceae), *Drymaria villosa* (Caryophyllaceae), *Juncus allioides* and *Juncus bufonius* L. var. *congestus* (Juncaceae) are reported as new record to Uttarakhand.

Public service rendered

Dr. P.K. Pusalkar, Scientist 'D' provided information about literature and flora of Kedarnath division and NDBR to Sri Pankaj Kumar, DFO (Working Plan), Kedarnath WLD, during his visit to NRC. Dr. Debasmita Pramanik, Bot. Asst. helped Prof. S.A. Gango and Prof. T.H. Masoodi in identification of the genus *Saccharum*. Supplied one type image of *Vigna subramaniana* to Dr. K.V. Bhat, NBPGR, New Delhi.

Visitors

Prof. C.R. Babu and Prof. Barik visited BSD herbarium on 13th January 2015.

TOLIC Meeting attended

Dr. S.K. Srivastava Scientist 'E' & HoO, Dr. B.S. Kholia, Scientist 'D' and Sri P.K. Deroliya attended Half yearly TOLIC meeting at Survey of India, Dehradun on 29.01.2015.



Solidago dahurica - new record for India



Drynaria villosa - new Record for Western Himalaya

Hindi saptah

Prizes were distributed to the winners of Hindi saptah competition on 23rd January 2015.



During prize distribution function of Hindi saptah at BSI, NRC



Dr. Brijesh Kumar, Bot. Asst. (above) and Dr. Debasmitta Dutta Pramanick and Sri Virendra Madhukar providing information on plants to the visited students (below)



Meeting attended

Dr. S.K. Srivastava, Scientist 'D' & HoO attended Punjab Wild-life Board Meeting at Chandigarh on 17th January 2015 under Chairmanship of Hon. Chief Minister Sri P.S. Badal. Dr. P.K. Pusalkar, Scientist 'D' attended DPC meeting of Central Soil Conservation and Research Institute, Dehradun, as an outside expert on 12th January 2015.

Publications

Manikandan, R. 2015. Floristic diversity of the family Asteraceae from Karnataka state. *Higher Plant. Ind. Subcontin.* 11: 1—128.

Manikandan, R., Chandrasekar, K. and Srivastava, S.K. 2015. The Family Lamiaceae in Jammu and Kashmir, India. *Higher Plant. Ind. Subcontin.* 11: 177—230.

Manikandan, R. and Srivastava, S.K. 2015. The family Scrophulariaceae in Jammu & Kashmir, India. *Higher Plant. Ind. Subcontin.* 11: 129-176.

Pusalkar, P.K., Singh, D.K. and Srivastava, S.K. 2014. New and noteworthy plant records in Western Himalayan Flora. *Ann. For.* 22(1): 49—56.

Ambrish, K. and Srivastava, S.K. 2014. Taxonomic studies on Genus *Arnebia* Forssk. (Boraginaceae) in India. *Taiwania* 59 (4): 315—325.

Sikkim Himalayan Regional Centre, Gangtok

For the ongoing project on 'Family Rubiaceae for Flora of India' (Amplification of the description of ca 65 poorly known species supplemented with illustration and possible photographs) drawing and description of 30 species were completed by Dr. Mohan Gangopadhyay, Scientist 'D' & HoO.

In connection with the Flora of the Shingba Rhododendron Sanctuary, Dr. C.S. Purohit, Bot. Asst. identified 400 plant specimens into 228 species and finalized their description. Apart from these, phenology of 50 EET plants in the campus garden was recorded weekly by Dr. Purohit.

Visitors

Three researchers visited this centre for consultation of herbarium and library.

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

In connection with the project, 'Flora of Malabar Wildlife Sanctuary, Kerala', Dr. J.H. Franklin Benjamin, Scientist 'B' and Sri R.G. Vadhyar conducted field trip from 19th to 30th January 2015. During this field trip specimens of 233 field numbers were collected. Dr. J.V. Sudhakar, Bot. Asst. accompanied as a resource person to the tour party of Bharathidasan University, Trichy in plant exploration tour to Palani hills from 6th to 9th January 2015 and collected specimens of 105 field numbers. Dr. J.V. Sudhakar and Sri K. Yarrayya, Sr. Pres. Asst. conducted field trips to Anamalais and Nilgiri hills on 14th & 16th January, 2015 to collect the species of *Ficus* and sedges respectively.

16 field numbers of previous collections from Point Calimere Wildlife Sanctuary, Tamil Nadu were identified by Dr. G.V.S. Murthy, Scientist 'F' & HoO, Dr. Kaliamoorthy, Scientist 'D' and Sri K. Yarrayya, Sr. Pres. Asst. Similarly, Dr. M. Palanisamy, Scientist 'D' and Sri S.K. Yadav, Bot. Asst. identified 35 field numbers in connection with 'Seaweed Flora of Karnataka Coast'.

Under 'Ex-situ conservation of endangered and threatened plants', Dr. S. Kaliamoorthy collected and introduced *Liparis atropurpurea* (orchid) and 5 taxa of the family Cactaceae in National Orchidarium and Experimental Garden (NO & EG), Yercaud. Besides, in the garden multiplied 20 samples of orchids and 23 samples of other angiosperms, transplanted 14 samples and developed seedlings (15 nos.), cuttings (25 nos.), replanted (7 nos.) and recorded the phenology of 21 species including 21 orchids and 10 species of other angiosperms.

Public Service Rendered

Identified 31 plant samples for the researchers and supplied a total of 204 pages of photocopies from library. Dr. M. Palanisamy acted as an external examiner to conduct the Public viva-voce for awarding Ph.D. Degree at Botany Department, St.

Joseph's College (Autonomous), Tiruchirapalli, Tamil Nadu on 9th January 2015.



A view of Malabar Wildlife Sanctuary, Kerala



Humboldtia brunonis var. *brunonis* (Fabaceae)

Promotion of Rajbhasha

Four staff of this centre passed the Prabodh exam conducted under the Hindi Teaching Scheme of the Dept. of Official Language, Govt. of India.



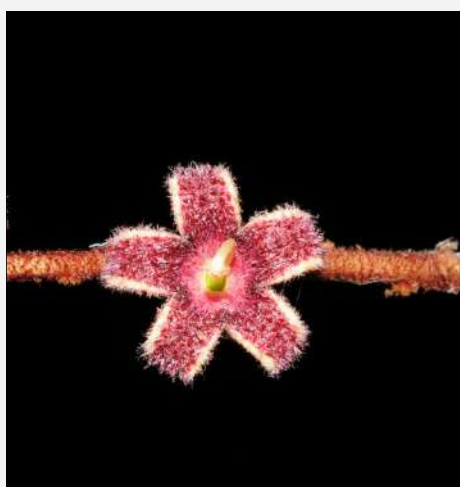
Viburnum punctatum (Caprifoliaceae)



Desmodium ferrugineum (Fabaceae)



Knema attenuata (Myristicaceae)



Sterculia guttata (Sterculiaceae)

Digitization of Type specimens

For the type specimens of the Barcode numbers from MH00001201 to MH00001230, protologue details were collected and entries were made in data base by Ms. R. Mehala Devi, Sr. Pres. Asst. Eight isotypes and one holotype (*Trachys copeana* Kabeer & V.J. Nair) were accessioned and incorporated in Type section of MH.

Dr. Palanisamy acting as Ph.D. viva-voice Examiner at St. Joseph College, Tirichi

Visitors/students

36 students/ research scholars/ lectures/ scientists visited the herbarium and library of the SRC, Coimbatore, while 1370 persons in 201 parties visited NO & EG, Yercaud.

Publication

Tiwari, R. Sudhakar, J.V., Chaudhary, L.B., Murthy, G.V.S., Durgapal, A. 2014. Revisit the Taxonomy of *Ficus krishnae* (Moraceae). *Phytotaxa* 192 (3): 169–180.



WESTERN REGIONAL CENTRE, PUNE

Dr. J.S. Jalal, Scientist 'C' prepared detailed descriptions for 24 orchid species along with 12 colour illustrations under the project "Orchids of Maharashtra". Dr. A. Benniamin, Scientist 'D' & HoO submitted the final report of 'Ferns of Maharashtra'.

Scanning Electron Microscopy

Dr. A. Benniamin, studied the spores of *Botrychium daucifolium*, *Osmunda hugeliana* and *Cyathea gigantea* under Scanning Electron Microscope (SEM) in connection with the Pteridophytic flora of Karnataka.

Public service rendered

Identification and authentication of plant specimens were done for B. Pharm. M. Pharm. and research students. Dr. J. Jayanthi, Scientist 'D' conducted one botanical garden inspection tour to Shevgaon, Maharashtra on 29th January 2015 under the assistance to botanical garden scheme.

Visitors/students

Addl. PCCF, Hyderabad, Andhra Pradesh visited BSI office and Mundhwa Experimental Garden on 20th January 2015. Scientists and research students from St. Xavier's College, Mumbai; Allana College of Architecture; Pune University; CSIR-National Chemical Laboratory, Pune visited for consultation of herbarium and library.

Publications

Jayanthi, J., Karthigeyan, K. and Sumathi, R. 2013 (2015). *Phyllanthus gracilipes* (Miq.) Mull. Arg. (Euphorbiaceae) – A new record for India from Great Nicobar Island. *Malayan Nat. Jour.* 65(4): 243–246.

Jadhav, C.R., Jalal, J.S. and Jayanthi, J. 2015. Extended distribution of *Phalaenopsis deliciosa* (Orchidaceae) in Goa, Western Ghats, India. *Richardiana* 15: 161–167.

Benniamin, A. 2014. Additions to the pteridophytic flora of Tripura, North East India. *Indian J. Forestry.* 37(3): 355—358.



Phalaenopsis deliciosa (Orchidaceae)



Rotala floribunda (Lythraceae)



Abutilon ranadei (Malvaceae)

PROMOTIONS

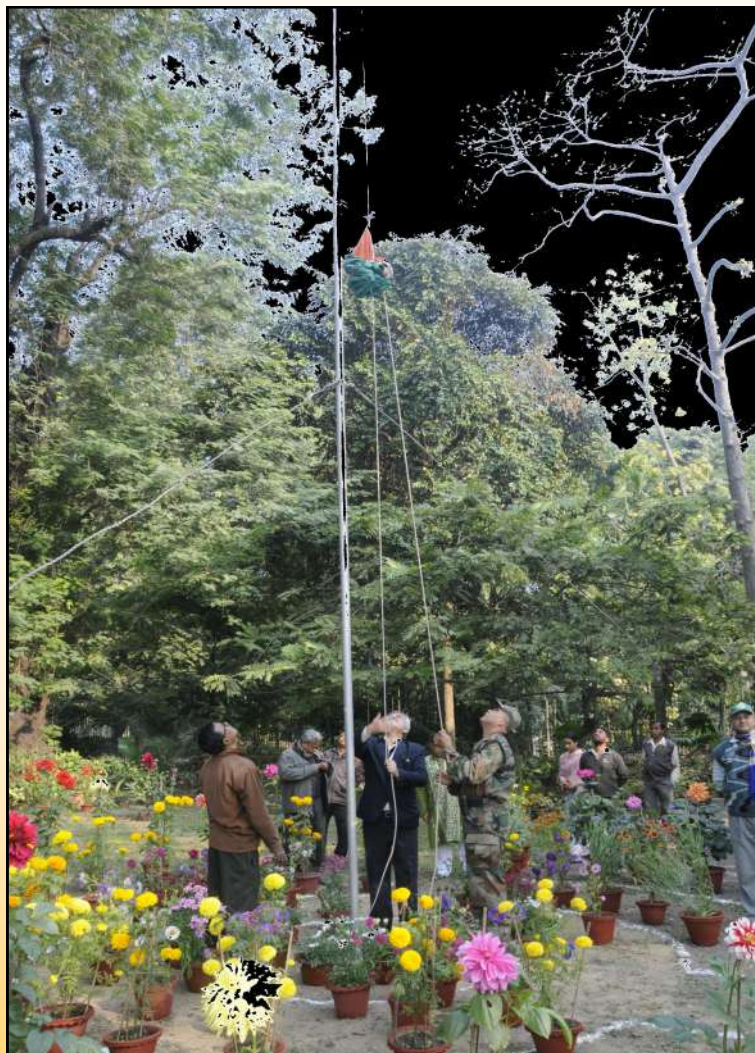
Congratulations to 37 scientists of Botanical Survey of India, who got *in-situ* promotion to their next higher grade under the Flexible Complementing Scheme after they were assessed by the Departmental Assessment Committee of the Ministry of Environment, Forest & Climate Change, New Delhi.

- ⇒ **Dr. A. Pramanik**, AJCBIBG, Howrah promoted as Scientist 'E'.
- ⇒ **Dr. P. Lakshminarasimhan**, CNH, Howrah promoted as Scientist 'E'.
- ⇒ **Dr. G.P. Sinha**, CRC, Allahabad promoted as Scientist 'E'.
- ⇒ **Dr. M. Ahmedullah**, Hqrs. (deployed in DRC, Hyderabad) promoted as Scientist 'E'.
- ⇒ **Dr. S.K. Srivastava**, NRC, Dehradun promoted as Scientist 'E'.
- ⇒ **Dr. Md. Nehal Aziz**, Hqrs., promoted as Scientist 'E'. Dr.
- ⇒ **Dr. (Mrs.) Pratibha Gupta**, Hqrs. promoted as Scientist 'E'.
- ⇒ **Dr. M.U. Sharief**, AJCBIBG, Howrah promoted as Scientist 'E'.
- ⇒ **Dr. Sheo Kumar**, AJCBIBG, Howrah (deployed in BGIR) promoted as Scientist 'E'.

- ⇒ **Dr. S.S. Hameed**, AJCBIBG, Howrah promoted as Scientist 'D'.
- ⇒ **Dr. A.B.D. Selvam**, Hqrs. promoted as Scientist 'D'.
- ⇒ **Dr. R.K. Gupta**, Hqrs. promoted as Scientist 'D'.
- ⇒ **Dr. B.S. Kholia**, NRC, Dehradun promoted as Scientist 'D'.
- ⇒ **Dr. Kumar Ambrish**, NRC, Dehradun promoted as Scientist 'D'.
- ⇒ **Dr. Nripemo Odyuo**, ERC, Shillong promoted as Scientist 'D'.
- ⇒ **Dr. S.S. Dash**, Hqrs. promoted as Scientist 'D'.
- ⇒ **Dr. Vinay Ranjan**, CNH, Howrah promoted as Scientist 'D'.
- ⇒ **Dr. H. S. Mahapatra**, AJCBIBG, Howrah promoted as Scientist 'D'.
- ⇒ **Dr. V. Sampath Kumar**, CNH, Howrah promoted as Scientist 'D'.
- ⇒ **Dr. M. Palanisamy**, SRC, Coimbatore promoted as Scientist 'D'.
- ⇒ **Dr. (Mrs.) Arti Garg**, CRC, Allahabad promoted as Scientist 'D'.
- ⇒ **Sri Vinod Maina**, AZRC, Jodhpur promoted as Scientist 'D'.
- ⇒ **Dr. J. Jayanthi**, WRC, Pune promoted as Scientist 'D'.

- ⇒ **Dr. Harish Singh**, CBL, Howrah promoted as Scientist 'D'.
- ⇒ **Dr. S. Kaliamoorthy**, SRC (NO&EG), Yercaud promoted as Scientist 'D'.
- ⇒ **Dr. Lalji Singh**, ANRC, Port Blair promoted as Scientist 'D'.
- ⇒ **Dr. Chaya Deori**, ERC, Shillong promoted as Scientist 'D'.
- ⇒ **Dr. R. Manikandan**, NRC, Dehradun promoted as Scientist 'D'.
- ⇒ **Dr. K.A. Ahmed Kabeer**, SRC, Coimbatore promoted as Scientist 'D'.
- ⇒ **Dr. A.K. Sahoo**, ISIM, Kolkata promoted as Scientist 'D'.
- ⇒ **Dr. Rashmi Dubey**, WRC, Pune promoted as Scientist 'D'.
- ⇒ **Dr. T.A.M. Jagdish Ram**, ANRC, Port Blair promoted as Scientist 'D'.
- ⇒ **Dr. Sandeep Chauhan**, Hqrs. (Deployed in MoEF & CC, New Delhi) promoted as Scientist 'D'.
- ⇒ **Dr. S.L. Meena**, AZRC, Jodhpur promoted as Scientist 'D'.
- ⇒ **Dr. G.S. Panwar**, NRC, Dehradun promoted as Scientist 'C'.
- ⇒ **Dr. Kuldip Dogra**, AZRC, Jodhpur (Deployed in BGIR) promoted as Scientist 'C'.
- ⇒ **Dr. W. Arisdason**, CNH, Howrah promoted as Scientist 'C'.

PLANT OF THE MONTH



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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