



# BSI NEWSLETTER

The monthly electronic newsletter of Botanical Survey of India

## Director's column

During this month, the BSI scientists described four new species, *Impatiens albopetala* and *I. dibangensis* from Arunachal Pradesh, *Molineria garoense* (Hydroxylaceae) from Meghalaya and *Memecylon macneillianum* (Melastomataceae) from Andamans. They also made new records to India, the family Gesneriaceae from Andamans, and three species, one flowering plant, *Carex capillaris* (Cyperaceae), one fern, *Thelypteris polycarpa* (Pteridaceae) and one liverwort, *Cheilolejeunea vittata* (Lejeuneaceae), which were reported from different regions of India.

The Scientists of BSI also conducted field tours in connection with their ongoing projects like 'Indigenous palms of India', 'Ethnobotany of Odisha', 'Seaweeds of Karnataka Coast' and 'Cyperaceae of Tamil Nadu'.

Apart from these, for floristic documentation of the protected areas, field trips were conducted to 'Neora Valley National Park', Darjeeling, West Bengal, 'Betla National Park', Jharkhand, 'Bhoj Ramsar Site', Madhya Pradesh, 'Chandra Prabha Wildlife Sanctuary', Uttar Pradesh, 'Parvati Aranga Wildlife Sanctuary', Uttar Pradesh, 'Sacred Groves of Adilabad and Nizamabad districts', Telangana, and to 'Biligiri Rangaswamy Temple Wildlife Sanctuary', Karnataka.

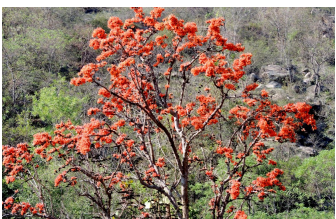
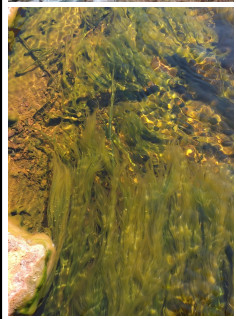
A three-day collaborative workshop was organised by the Western Regional Centre (WRC), BSI, Pune and Naoroji Godrej Centre for Plant Research (NGCPR), Shirwal, Satara on "Interactive talks and Workshop on Essentials in Plant Revisionary studies and Flora writing" at WRC from 1st to 3rd December 2016. About 58 research students from almost all parts of India participated in this workshop, in which 15 resource persons delivered talks and demonstrated on different topics.

In all the units/regional centres of BSI, a workshop on Digital payment and training on e-payments were conducted in the first week of December 2016 to bring awareness among the officials.

Jai Hind!

**Paramjit Singh**

Director, Botanical Survey of India, Kolkata



## HEAD QUARTERS, KOLKATA

In connection with the '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', and 'Liverworts and Hornworts Flora of Darjeeling District, West Bengal' scientists and scientific staff of the Cryptogamic unit made identifications, illustrations and also taken microphotographs.

The micro-morphological features (surface ornamentation) of the pollen grains of three species of *Cycas*, which were micrographed earlier under SEM (Scanning Electron Microscope) were described by Dr. A.B.D. Selvam, Scientist 'D'.

### Conference/meeting attended/lecture delivered

The scientists and scientific staff of Headquarters attended a lecture, "Taxonomy and ecology of Cyanobacteria and algae from Polar regions" delivered by Dr. Lubomir Kovacik, Assistant Professor, Department of Botany, Comenius University, Bratislava, Slovakia at CNH Committee room Howrah on 20.12.2016.

The scientific officials of Headquarters also attended the inaugural session of the International Conference on "The green planet: past, present and future" organized by CAS Phase VII, Department of Botany, University of Calcutta in collaboration with Probir Chatterjee Research Foundation Department of Botany, University of Calcutta and Botanical Survey of India at Centre for Research in Nanoscience & Nanotechnology, University of Calcutta, Salt lake, Kolkata.

Dr. Kanad Das, Scientist 'D' delivered a talk on "Shaping the passion of a mushroom hunter" under the theme, Biodiversity, Conservation & Climate change (non-flowering plants) in the "International Conference on The Green Planet: Past, Present and Future at University of Calcutta, Kolkata on 22.12.2016.

Mr. Manoj Emanuel Hembrom, Botanist participated in three-day (21st–23rd December 2016) International Conference on "The green planet: past, present and future" Mr. Hembrom presented a talk on "Hymenophoral diversity among wood-rotting macrofungi of Jharkhand" under the theme, Biodiversity, Conservation & Climate change (non-flowering plants).

Sri Hembrom also attended one day Jeev Board meeting held at Project Building, Dhurwa, Ranchi under the Chairmanship of Chief Minister, Jharkhand, on 26.12.2016 as a representative of Botanical Survey of India.

Mr. Hembrom assisted three research scholars from Department of Botany, HNB Garhwal University, Srinagar, Pauri, Uttarakhand in their macro- & microscopic characterization of various Himalayan fleshy macrofungi.

Sri Arvind Parihar, Bot. Asst. also participated in the three-day International Conference on "The green planet: past, present and future" and made Poster presentation entitled, "A detailed account of woodrotting macrofungi from Koderma wildlife sanctuary, Jharkhand" under theme, Biodiversity, Conservation & Climate change (non-flowering plants).

Dr. S. Bandyopadhyay, Scientist 'B' attended the 'Workshop on essentials in plant revisionary studies and flora writing' organized by Naoroji Godrej Centre for Plant Research (NGCPR), Shirwal, Satara, Maharashtra in collaboration with Botanical Survey of India, Western Regional Centre, Pune from 1–3 December, 2016. In this, Dr. Bandyopadhyay delivered two lectures entitled 'Identification and naming of plants' and 'Important websites for doing research in plant taxonomy'.

### Public service rendered

Dr. A.B.D. Selvam pharmacognostically studied and authenticated six crude drug samples [viz., *Acorus calamus* (Acoraceae)–Dried rhizome, *Zingiber officinale* (Zingiberaceae)–Dried rhizome, *Aegle marmelos* (Rutaceae)–Leaves, *Ocimum tenuiflorum* (Lamiaceae)–Leaves, *Foeniculum vulgare* (Apiaceae)–Seeds, *Swertia chirayita* (Gentianaceae)–Whole plant], received from M/s Imami Limited, Kolkata.

### Visitors/students

30 undergraduate students and 5 lecturers from Tamralipata College, Tamruk, East Medinipur, West Bengal.

### Publications

Selvam, A.B.D. 2016. Trans-anatomy: A new Botanical Term. *World J. Pharm. Pharm. Sci.* 5(9): 1539–1546.  
Singh, D. and Singh, D.K. 2016. Notes on sporophytic details of *Aneura crateriformis* (Aneuraceae, Marchantiophyta). *J. Bryol.* 38(4): 351–353.

## AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

A tour was conducted in different parts of South India, covering southern parts of Karnataka and northern parts of Kerala under the project “Indigenous Palms of India” from 8th to 16th December by Dr. S.S. Hameed, Scientist ‘D’ and approximately 500 seeds/saplings of palms belonging to 9 species were collected and introduced in the garden for *ex-situ* conservation. 20 Seedlings of other 4 endemic plants were also collected and introduced in the garden.

Dr. Pratibha Gupta, Scientist ‘E’ analyzed 6 numbers of Algal samples collected from Antarctica under Leica DM 2500 Microscope and 152 numbers of photomicrographs of these samples were taken. Dr. Gupta collected 7 nos. of epiphytic algal samples from different localities and brought in to the Laboratory and preserved in Formalin for Identification. More than 50 Field Photographs and 7 videos were taken at the site of collection.

### Garden Maintenance

Special drive was taken for lake cleaning by CPWD applying trash boom technique in the King and Prain lakes.

Boating for the visitors resumed in the King and Prain lakes.

Special arrangements for signage, public address system, etc. were installed for proper management of visitors in the garden during the peak season.

Dr. Pratibha Gupta surveyed King lake, Prain lake, Diwan lake, Janardan lake, Shadir lake, Leram lake etc., of AJC Bose Indian Botanic Garden along with Dr. A. Pramanick, Scientist ‘E’ & HoO on 08.12.2016 for assessing the basic physical conditions of the lakes for the study and possibility of implementation of Grander Technology.

A special cleaning drive have been undertaken to remove all the “Banyan” logs (fallen/broken branches) lying within the periphery of the Great Banyan Tree (GBT) and to clean the residual weeds from the western part of the GBT by additional manpower and machines. 9 of encaged aerial roots repaired during this period in respect of refixing and replacing of bamboo cages fitted to them according to their growth. Four numbers of aerial roots were en-caged in bamboo cages for training them as ‘prop root’. Six numbers of aerial roots were encaged in Bamboo cages for training them as ‘Prop roots. Approximately 15 nos. of prop roots have been applied with Broad spectrum insecticide to check termite attack.

### Visitors/students

More than 500 VIPs, dignitaries and students visited the garden during this month.



Palm saplings collected from South India



Visitors enjoying boating in the King lake



Visitors near the Great Banyan Tree on the occasion of Christmas, 2016

### Seminars attended

Dr. A. Pramanik attended 3rd One day seminar on Plant Sciences held in Hooghly Mohsin College, Chinsurah on 02.12.2016 and delivered lecture on 'AJC Bose Indian Botanic Garden, an age old scientific institution in conservation perspective – an overview'.

Dr. P. Gupta attended seminar on " Genomic: Molecular to Ecosystem Level" held on 09.12.2016 at Vidyasagar Hall, The Asiatic Society, Ministry of Culture, Kolkata.

### Publications

Sharief, M.U. and Panda, S.P. 2016. Ethnobotanical Studies of the Dwindling Jarawa Tribe in Andaman Islands. *Int. J. Genetic Resources & Crop Evolution* 63(8). DOI 10.1007/s10722-016-0474-0.

Das Das, M., Giri, G.S., Pramanik, A. and Maity, D. 2016. *Memecylon macneillianum* (Melastomataceae), a new species from South Andaman, India. *Telopea* 19: 185–191.

– Dr. A. Pramanik  
Scientist 'E' & HoO

## CENTRAL NATIONAL HERBARIUM, HOWRAH

Dr. Vinay Ranjan, Scientist 'D' along with Dr. Gopal Krishna and Sri Anant Kumar, Bot. Assts. undertaken one field tour to Neora Valley National Park from 14th to 24th December 2016 and collected about 125 field numbers from various localities in North Range.

Sri P.P. Ghosal, Botanist and with Sri Anand Kumar, Bot. Asst. undertaken one field tour to Betla National Park, Jharkhand from 8th to 19th December 2016.

Dr. Prasad undertaken a herbarium consultation tour to PBL, Port Blair from 24th November to 2nd December 2016 to collect the label data of all the available specimens of *Fimbristylis* (Cyperaceae) and to collect specimens by undertaking field work to nearby areas in South Andaman. Consulted about 800 specimens, noted label data of representative specimens of each island and collected 25 field numbers during the field tour. Dr. Prasad corrected the identity of 50 specimens in Port Blair and 5 specimens of Cyperaceae collected from Andaman & Nicobar Islands.

### Herbarium specimen identification

Dr. Vinay Ranjan identified 5 field numbers collected from Neora Valley National Park, Darjeeling district, West Bengal.

Dr. O.N. Maurya, Scientist 'C' identified 7 field numbers collected from Vikramshila Gangetic Dolphin Wildlife sanctuary, Bhagalpur, Bihar.

Sri Anant Kumar identified 3 field numbers collected from Neora Valley National Park, Darjeeling district, West Bengal.

Sri V.K. Mastakar, Bot. Asst., identified 5 species belonging to different genera of Leguminosae in Hall No. 2, Central National Herbarium.

### Herbarium specimens digitized

Data entered of 20 specimens in Excel sheet and scanned 4 type sheets of *Cycas pschannae* and provided to Dr. Lal Ji Singh, ANRC, Port Blair by Sri Anand Kumar.

### Public service rendered

CNH officials identified 15 plant specimens: 5 species by Dr. Rajib Gogoi, Scientist 'D'; 1 species by Dr. Subir Bandhopadhyay, Scientist 'B'; 1 species by Dr. Sangita Dey, PDF; 1 species by Dr. Saumyashree Pathak, SPF; 3 species by Sri Anant Kumar and 4 species by Sri Shyam Biswa, Bot. Asst., come from Agricultural & Ecological Research Unit, Indian Statistical Institute, West Bengal; Dr. B.C. Roy College of Pharmacy & Allied

Health Sciences, Bidhannagar, Durgapur; Bengal School of Technology, Hooghly; Department of Pharmaceutical Sciences & Technology, BIT, Mesra, Ranchi, Jharkhand and Kumaun University, Uttarakhand.

Dr. Gogoi reviewed one manuscript on 2 species of *Impatiens* from Western Ghats sent from the journal *Phytotaxa*.

Dr. Ranjan taken practical examination M.Sc. IIIrd semester as an external examiner in Visva-Bharati University, Santiniketan, Birbhum, West Bengal on 01.12.2016.

Dr. V. Sampath Kumar, Scientist 'D' provided pdf of the paper, Srivastava, S.K. and Nair, V.J. (2010) Genus *Ischaemum* L. (Poaceae) in India. *Nelumbo* 52: 63-92. to Dr. Vatsavaya S. Raju, Retd. Professor, Department of Botany, Kakatiya University, Warangal, Telangana.

Dr. Bandyopadhyay provided PDF of 3 pages [*Kavaka* 40: 3–5. 2012] to Dr. K.N. Gandhi; of 184 pages on *Mucuna* from *Kew Bull.* Volumes 47(2): 1992; 46(2): 1991; 45(1): 1990; 42(1): 1987 and 39(1): 1984, of 3 pages of the protologue of *Leptodesmia pulchella* Yatabe., *Bot. Mag. (Tokyo)* 4: 1890 and of 4 pages on *Leptodesmia* from the Leguminosae of Madagascar by Du Puy *et al.* (2002) to Dr. M. Sanjappa; of 18 pages on *Indigofera* from *Bull. Bot. Surv. India* 28: 1986; *Notes Roy. Bot. Gard. Edinburgh* 37: 1979; *J. Econ. Taxon. Bot.* 4: 1983 and *J. Bombay Nat. Hist. Soc.* 81: 1984 to Devender Singh Meena, Plant Systematics Laboratory, Department of Botany, University of Delhi.

Dr. Bandyopadhyay identified an image of a specimen to be of *Phanera glauca* Benth. subsp. *tenuiflora* (Watt ex C.B. Clarke) A. Schmitz received from Santanu Dey, Research Scholar, Nagaland University.

Dr. Bandyopadhyay also provided information regarding author of one plant name [Dr. M.P. Nayar] for incorporation in the Author Query database of IPNI.

Dr. Avishek Bhattacharjee, Scientist 'B' sent images of 8 specimens of *Hemiorchis* to Dr. Mark Newman, Royal Botanic Garden, Edinburgh.

Dr. Bhattacharjee sent 2 literatures on *Clerodendron* and *Hydrocotyle* to Prof. Pankaj Kumar Pal, Department of Botany, The University of Burdwan, Burdwan, West Bengal.

Dr. Bhattacharjee also reviewed a manuscript on typification.

Sri Anand Kumar provided 140 type specimens of *Dioscorea* to Ravikiran Pagare and digital images of *Acacia lenticularis* to Anup S. Deshpande, Goa University.

### **Meetings/Seminar/conference attended/lecture delivered**

Dr. P.V. Prasanna, Scientist 'F' & HoO attended 33th West Bengal Biodiversity meeting on 14.12.2016.

Dr. Ranjan attended meeting with Director, Botanical Survey of India regarding Jharkhand Biodiversity Board projects.

Dr. Sampath Kumar and Dr. Maurya attended the inauguration of the International conference on "The Green Planet: past, present and future" along with the HoO, CNH at Centre for Research in Nanoscience and Nanotechnology, University of Calcutta, Salt lake, Kolkata on 21.12.2016. The conference was organized by Dept. of Botany, University of Calcutta in collaboration with Probir Chatterjee Research Foundation and Botanical Survey of India. Attended lectures including Keynote lecture by Prof. Lubomir Kovacik, Comenius University, Slovakia.

Dr. Bhattacharjee attended workshop on 'Workshop on Essentials in Plant Revisionary Studies and Flora writing' (as a resource person) jointly organised by Botanical Survey of India, Western Regional Centre, Pune and Naoroji Godrej Centre for Plant Research, Shirval from 01.12.2016 to 03.12.2016 at Botanical Survey of India, Western Regional Centre, Pune.

Dr. A. Bhattacharjee delivered a presentation cum interactive talk on 'Basics of plant taxonomic Revisions: Experience revising orchids' at Botanical Survey of India, Western Regional Centre, Pune, Maharashtra.

## Visitors/students

Mrs. Anupama Roy along with two students from Presidency University, West Bengal on 01.12.2016. 50 students from Vijay Garh Jyotish Ray college, West Bengal on 02.12.2016. 25 students from Tamralipta Mahavidyalaya,,Midanapur, West Bengal on 05.12.2016. Ms. Sampa Ghosh from Assam University, Assam from 5th to 28th December 2016. 110 students from Barasat college, West Bengal and 50 students from Amity University, West Bengal on 06.12.2016. Sri Ravikiran Pagare from Goa University, Goa from 15th to 16th December 2016. Sri Anup Deshpande, Research Scholar, University of Goa, Goa on 17.12.2016. Dr. Bruce Maslin, from Singapore Herbarium from 17th to 23rd December 2016. 27 students of B.Sc. Honours and 2 teachers of Vidyasagar College, West Bengal on 19.12.2016. Dr. K. Pradheep, ICAR-NBPGR, New Delhi from 19th to 22nd December 2016. Dr. L. Kovacik, Comenius University in Bratislava, Bratislava, Slovakia; 35 students of B.Sc. and teachers of Vidyanagar College, West Bengal; 24 students of Botany Hons. from L.N. College, Jharsuguda, Orissa; 17 students of Botany Hons. from Sree Chaitanya College, Habra, West Bengal; 20 students with Prof. M. Ganesan, Department of Life Sciences, Presidency University; Ms. L. Malemyanbee Chanu from Assam University, Assam on 20.12.2016. Dr. Adnan Whitehall and Mrs. Ruth Whitehall, Derbyshire, U.K. on 21.12.2016. Ms. Sudipta Modi from London, U.K. on 23.12.2016. 05 Scientists from Birbal Sahni Institute of Palaeosciences, Lucknow from 26th December 2016 to 2nd January 2017. 21 students of M.Sc. Botany from Sikkim University, Sikkim on 27.12.2016.



Dr. L. Kovacik, Comenius University, Bratislava, Slovakia at Central National Herbarium, BSI, Howrah

## Publications

Maji, A. and Prasad, V.P. 2016. *Carex capillaris* L. (Cyperaceae) – a new distribution record for India. *J. Threatened Taxa*. 8(14): 9673–9674.

Karthigeyan, K. and Gogoi, R. 2016. Lectotypification of two Indian species of *Impatiens* L. (Balsaminaceae). *Phytotaxa* 288(2): 193–196.

Gogoi, R. and Borah, S. 2016. Two new species of *Impatiens* L. (Balsaminaceae) from Arunachal Pradesh, Northeast India. *Webbia*. <http://dx.doi.org/10.1080/00837792.2016.1253913>.

– Dr. P.V. Prasanna  
Scientist 'F' & HoO

## CENTRAL BOTANICAL LABORATORY, HOWRAH

Sri A.C. Halder, Botanist, Headquarter (working place CBL), Sri P.K. Baske, Botanist, CNH (working place CBL), Dr. (Mrs.) Monika Mishra, Bot. Asst. and Sri Somnath Ganguly, Lab. Attend. conducted an ethnobotanical field tour of Baudh district, Odisha from 20th November to 3rd December 2016. A total of 182 field numbers (In duplicate) were collected with 235 ethnobotanical uses (161 are as medicinal, 32 food, 1 veterinary medicine, 2 tooth brush, 2 Basket making, 2 rope making, 1 country liquor and 10 other purposes).

Dr. K.A. Sujana, Scientist 'D' conducted one field tour to Andaman & Nicobar Islands from 24th November to 2nd December 2016 and collected 105 field numbers with 139 economic/ ethnobotanical information. Dr. Sujana also collected three live plants namely, *Polystachya concreta*, *Dendrobium formosum* and *Oberonia ensiformis*.

Ms. Sagari Chaudhury, SPF conducted a field tour to Pathar Pratima Block of South 24 Pargana district of West Bengal from 5th to 8th December 2016 and collected 5 plant specimens and 1 animal part with 25 ethnobotanical information.

Dr. Harish Singh, Scientist 'D' & HoO and Dr. P.A. Dhole, Bot. Asst. identified 54 plant species collected from Nuapada district of Odisha.

Ms. Monika Mishra counted chromosome number of *Cleome viscosa* as  $2n=30$ .



***Dendrophthoe falcata* (Loranthaceae) - used for wound healing, menstrual disorder in Baudh district, Odisha**



**Dr. K.A. Sujana engaged in plant exploration & collection**



**Dr. H. Singh talking about Digital payments in CBL**

### Workshop conducted

Conducted a workshop on Digital payment and given training on e-payments to all staff of CBL on 07.12.2016.

### Visitors/Students

36 students and one teacher from Surendranath College, Kolkata; 48 students and 08 Teacher from Bolpur High School, Bolpur, Birbhum; 25 students and two teachers from Tamralipta Mahavidyalaya,

Tamluk, Purba Medinipur; 56 students and one teacher from Amity University, Rajarhat, New Town, Kolkata; 35 students and 03 teachers from Vidyanagar College, South 24 Parganas; 12 students and 02 teachers from Egra S.S.B. College, Egra, Purba Medinipur and 40 students and three teachers from Department of Life Sciences, Presidency University, Kolkata visited ethnobotanical museum, CBL Howrah.

### Publications

Baske, P.K., Halder, A.C., Pandey, A.D. and Sujana, K.A. 2014 (Publ. 2016). An Overview of Ethnobotany of Bargarh District, Odisha-II. *Journal of Economic & Taxonomic Botany*, 18(3-4): 485-501.

Dhole, P.A., Mishra, M., Pandey, A.D. and Sujana, K.A. 2016. Conservation of Ethno-gynaecologically Important Plants in Forests of Koraput District, Odisha. In: *Forest Ecosystem: Biodiversity, Ecology and Conservation*. Educationist Press-Write & Print Publications, New Delhi. pp. 248-263.

Joseph, J., Sujana, K.A. and Anil Kumar, N. 2016. Study on propagation, phytochemical and antimicrobial screening of an endemic liana-*Beaumontia jerdoniana* Wight. *Int. J. Curr. Res.* 8(11): 41565-41570.

Verma, A.K., Mishra, M., Mallick, Liza and Singh, H. 2016. A meiotic study in *Solanum diphyllum* L.: an exotic plant species in India. *Res. in Environ. Life Sci.* 9(10): 1270-1271.

**- Dr. Harish Singh  
Scientist 'D' & HoO**

## INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

Two collection tours were undertaken, 47 varieties of rice (*Oryza sativa* L.) were procured from Koraput and Raygada of southern Orissa during 22nd November to 2nd December 2016 and 20 varieties of pulses, 15 varieties of oilseeds, 06 vegetable oils and 05 varieties of silk cocoons & yarn were collected from Berhampore, Murshidabad, West Bengal during 14th to 20th December 2016.



***Bixa orellana* (BIXACEAE) Sundari (O) Powder of Natural dye from the cover of dried seed collected to add in commercial food products in Koraput district, Odisha**



***Plumbago zeylanica* (PLMBAGINACEAE) Dhala-Chitaparu (O); Root used in Leucoderma cure by Kondh tribes in Koraput district, Odisha**



**Collection of cocoons from Central Silk Board, Berhampore, Murshidabad, West Bengal**



**Receiving Oilseeds & Pulses varieties from Joint Director, Pulses & Oilseeds Research Institute, Berhampore, Murshidabad, West Bengal**

### Botanical Paintings

The botanical paintings by Roxburgh are being interpreted with updated nomenclature. Under this project 28 valid taxa of family Zingiberaceae and 8 members of family Convolvulaceae were interpreted.

### Database of Herbarium Specimens

As a part of preparing a database of herbarium specimens at BSIS, 25 numbers of Dicot herbarium specimens were listed and documented.

### Updating of Nomenclature of digitized Herbarium Specimens at BSIS

153 numbers of Digitized Herbarium specimens were updated with valid botanical names, basionyms/synonyms.





BSI participation in 'Damodar Mela', Amta, Howrah from December 7-13, 2016



Visitors at BSI exhibition stall during 'Damodar Mela', Amta, Howrah

### Programme attended

As a representative of BSI participated in 'Damodar Mela' at Raspur, Amta, Howrah from December 7-13, 2016.

Dr. M. Bhaumik attended an International conference on 'The Green Planet: Past Present and Future', organized by Dept. of Botany, University of Calcutta held at Kolkata on 21.12.2016.

### Public service rendered

Under the Narcotic Drugs & Psychotropic Substances (NDPS) Act, 01 (one) sample received from West Bengal Police was identified.

– Dr. Manas Bhaumik  
Scientist 'D' & HoO

## ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Dr. Lal Ji Singh, Scientist 'D' & HoO conducted one field tour to North Andaman from 15th to 22nd December 2016 and collected various species: Rattans & Bamboos-02, Zingibers-04, Seeds-11, Seedlings-27, others-08, Unidentified-03 and introduced in the Dhanikhari Experimental Garden Cum Arboretum.

Dr. Sanjay Mishra, Scientist 'B', Dr. C.P. Vivek. Bot. Asst. and Sri Gautam Anuj Ekka, Presv. Asst. conducted one field tour to Kyd, Pitman and James Islands from 12th to 16th December 2016, vouched 98 field numbers along with the GPS data. Plants/seedlings of 28 species were collected and introduced in the Dhanikhari Experimental Garden cum Arboretum.



Photo: Lal Ji Singh



*Thelypteris polycarpa* (Pteridaceae) reported for the first time from the Andaman Islands

### Herbarium identification

Dr. T.A.M. Jagadeesh Ram, Scientist 'D' identified 129 specimens of Arthoniaceae, Bacidiaceae, Lecanoraceae, Lecidiaceae into 18 species.

Dr. Sanjay Mishra, Scientist 'B', identified 7 unidentified specimens of Myristicaceae.

Dr. C.P. Vivek identified 02 herbarium specimens.

Sri Gautam Anuj Ekka assisted for characterization and identification of specimens.

### Digitization of herbarium specimens

Herbarium sheets Scanned: 60 nos. of the family Amaranthaceae.

Herbarium details computerized in Excel format: 1580 herbarium specimens of families Malvaceae, Ancistrocladaceae, Dipterocarpaceae, Sauraviaceae, Theaceae, Actinidiaceae, Clusiaceae, Hypericaceae, Portulacaceae, Flacourtiaceae, Bixaceae, Violaceae, Cleomaceae, Capparaceae, Nymphaeaceae, Papavaraceae, Brassicaceae, Clethraceae, Menispermaceae and Annonaceae were fed in the computer in a prescribed format.

### Meeting/conference/programme/function attended/organised

Dr. Lal Ji Singh co-organized an *International Conference on Climate Change Adaptation and Biodiversity: Ecological Sustainability and Resource Management for Livelihood Security* in association with Central Islands Agriculture Research Institute (CIARI) at Port Blair from 8th to 10th December 2016.

Dr. Singh, attended general body meeting of Andaman Adim Jan Jati Vikas Samiti at Raj Niwas, Chaired by Hon'ble Lt. Governor Prof. Jagdish Mukhi, Chairman, AAJVS Andaman and Nicobar Islands on 14.12.2016.

Dr. Singh, attended the Anniversary of Twelfth Year of Tsunami 2004 held at the Tsunami Memorial situated at Andaman Water Sports Complex, Aberdeen on 26.12.2016.

Dr. Singh, participated the Innovation in Science Pursuit for Inspired Research Programme (ISPIRE Programme) at Pondicherry University Brookshabad Campus, Port Blair on 26.12.2016.

Dr. Singh, attended Half Yearly meeting of Town Official Language Implementation Committee (TOLIC) at CIARI, Port Blair on 29.12.2016.

Dr. Singh, participated the 73rd anniversary of First Flag Hoisting Day at the Memorial for 30th December near Netaji Stadium on 30.12.2016.

### Visitors/students

Dr. Y.C. Tripath, Scientist 'F', Chemistry Division, Dr. Ombir Singh, Scientist, Forest Research Institute, Dehra Dun along with 1 member, visited Museum, Library and Herbarium ANRC on 09.12.2016.

Ms. Piu Das, SRF, Headquarter BSI, Kolkata visited Museum, Library and Herbarium ANRC on 26.12.2016.

Ms. Deepa Biswas, Binitha Sharma, Naziya Parveen, PG student, JNRM, Port Blair visited Library and Herbarium ANRC on 26.12.2016.



Photo: G.A. Ekka

FRI Scientists at Herbarium (left) and Museum (right), ANRC, BSI, Port Blair



Photo: C.P. Vivek

Prof. N.D. Paria at Herbarium (left) and Library (right), ANRC, BSI, Port Blair

Prof. Dr. Nanda Dulal Paria, Former Vice Chancellor, Vidyasagar University and Former Professor & Head Deptt. of Botany, Calcutta University, Presently Professor of Botany, Netaji Subhas Open University, Salt lake City, Kolkata visited Museum, Library, Herbarium on 27.12.2016.

### Award

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



Photo: Akbar, CIARI, Port Blair



International Conference on  
**CLIMATE CHANGE ADAPTATION AND BIODIVERSITY:  
ECOLOGICAL SUSTAINABILITY AND RESOURCE  
MANAGEMENT FOR LIVELIHOOD SECURITY**  
(ASA : ICCB - 2016)  
8 -10 December 2016



Dr. Lal Ji Singh, Scientist 'D' receiving the Fellow of the Andaman Science Association Award

### Publication

Singh L.J., Ekka, G.A. and Mishra, S. 2016. Ethnobotanical uses of plants in the Andaman and Nicobar Islands, India In: H.K. Chourasia and A.K. Roy, (Eds.) *Conservation, Cultivation, Diseases and Therapeutic Importance of Medicinal and Aromatic Plants*. Today and Tomorrow's Printers and Publishers, New Delhi, pp. 165–179.

Singh L.J., Kholia, B.S., Kumar, B., Joshi, P. and Sharma, S. 2016. On the Occurrence of *Thelypteris polycarpa* (Blume) K. Iwats. in Andaman Islands with a note its dispersal and distribution in India. *Indian Forester* 143(12): 1234–1236.

– Dr. Lal Ji Singh  
Scientist 'D' & HoO

## ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Photo: S. Borah



*Musa aurantiaca* (Musaceae) in  
APRC Garden, Itanagar

Dr. Umesh Kumar L. Tiwari, Scientist 'B' conducted a herbarium consultation tour to Sikkim from 7th to 23rd December 2016. During the course of herbarium study determinate were label for 203 accessions covering 25 families of 47 genera.

### Herbarium specimen identification

Dr. Vineet Kumar Rawat, Scientist 'D' & HoO, made description for 8 species along with phytogeographical distribution and taxonomical status of the family Polypodiaceae in connection with 'Taxonomic study of family Polypodiaceae of North East India'.

Dr. Manish K. Kandwal, Scientist 'D' identified specimens of 11 field numbers for 'Grass flora of Arunachal Pradesh'.

Dr. Krishna Chowlu, Scientist 'B' identified and description prepared along with coloured photo plates for 4 species of Orchid in connection with 'Red listing of orchids of Arunachal Pradesh as per IUCN criteria'.

Sri B.B.T. Tham, Botanist made descriptions for 12 species in connection with 'Flora of Pakhui Tiger Reserve and Wildlife Sanctuary'.

Dr. Souravjyoti Borah, Botanist made descriptions for 82 species in connection with 'Flora of Lohit District and Flora of Kamlang WLS, Arunachal Pradesh'.

– Dr. V.K. Rawat  
Scientist 'D' & HoO

## ARID ZONE REGIONAL CENTRE, JODHPUR

### Herbarium specimen identification

Specimens of 88 Field numbers identified during the month of December 2016, which includes 10 field numbers for the Ethnobotany of Dang Dist., Gujarat by Sri Vinod Maina, Scientist 'D' & HoO and Sri Ravi Prasad, 07 field numbers for the Flora of Shoolpaneshwar WLS, Narmada Dist., Gujarat by Dr. S.L. Meena, Scientist 'D' and Dr. Harikrishana Peddi, 54 field numbers for the Flora of Todgarh-Raoli WLS, Rajasthan by Dr. C.S. Purohit, Scientist 'B' and 17 field numbers for the Flora of Sariksa Tiger Reserve, Alwar District, Rajasthan by Dr. M.K. Singhadiya and Sri Ravi Prasad.

### Plant conservation

Recorded phenological data for 42 plants species of desert botanic garden, AZRC, Jodhpur.

### Meeting/programme attended/conducted

Sri Vinod Maina participated in side events of CoP-13, at Cancun, Mexico from 10th to 12th December 2016.

Dr. S.L. Meena attended forest guard trainee convocation programme on 15.12.2016 held at Forest Training Centre, Jodhpur (Rajasthan).



Dr. S.L. Meena with Sri Gajandra Singh Khivsar,  
Hon'ble Rajasthan State Forest Minister



Sri Vinod Maina participated in CoP-13  
Side events at Cancun, Mexico

Sri Vinod Maina and Dr. C.S. Purohit attended TOLIC meeting on 20.12.2016.

### Visitors

Sri Suresh Kumar Dev, Research Scholar, Dept. of Pharmaceutical Sciences, Mohan Lal Sukhadia University, Udaipur (Raj.), visited Museum on 20.12.2016.

### Publications

Kumar, S., Purohit C.S. and Kulloli R.N. 2016. Rarity of *Ceropegia bulbosa* Roxb. var. *lushii* and protocol for ex-situ conservation in the Indian Desert. *J. Applied and Natural Science*. 8(4): 2155–2163.

– Sri Vinod Maina  
Scientist 'D' & HoO

## CENTRAL REGIONAL CENTRE, ALLAHABAD

Dr. G.P. Sinha, Scientist 'E' & HoO and Sri Rajesh Kumar, Bot. Asst. undertaken a field tour to coastal areas of Marine National Park of Gulf of Kutch viz., Pirotan Island, Narara, Sachana, Balachadi, Jodiya-Navalakh; Khijadiya Birds Sanctuary, Jamnagar, Dwarka-Nageshwar area, Bhujbal, Beyt Dwarka, Sasan Gir National Park, Devalia WL Sanctuary, Porbandar and Girnar WLS, Junagadh areas from 16th to 29th December 2016 and collected 64 Field packets of lichens along with over 70 field and landscape photographs.

A field exploration tour was undertaken by Dr. Arti Garg, Scientist 'D' and Dr. A.P. Tiwari, Preserv. Asstt. to Bhoj Ramsar Site, Madhya Pradesh from 30th November to 9th December 2016. A total of 825 specimens under 275 field numbers were collected.

Dr. Achuta Nand Shukla, Scientist 'B', conducted a field tour to Chandra Prabha Wildlife Sanctuary, Uttar Pradesh from 19th to 26th December 2016. Total 177 field numbers of plant specimens were collected. Seedlings of *Drosera burmanii*, *Vanda tessellata* and *Curculigo orchioides* have been collected for multiplication in CRC, Botanical garden.

Sri Vineet Kumar Singh, Bot. Asst. and Parmanand Rai, Bot. Asst. undertaken a field exploration tour to Parvati Aranga Wildlife Sanctuary and Tikri forest area, Gonda, Uttar Pradesh from 23rd to 30th December 2016. A total of 102 field numbers (296 specimens) were collected along with photographs.



**Mangrove Vegetation at Pirotan Island  
Marine National Park, Jamnagar, Gujarat**



**Coastal Vegetation near Momai temple along  
Okha-Nageshwar Bhujebal area, Gujarat**



**A common coastal fruticose lichen *Roccella montagnei*  
at Pirotan Island, Marine National Park, Jamnagar**



***Dendrophthoe falcata* (Loranthaceae)  
flowering at CRC, Allahabad**

### Herbarium identification

A total of 10 species under 20 specimens were identified in connection with the project 'Flora of Chhattisgarh'- Vol. I. and 39 species under 90 specimens in connection with the 'Flora of Chandraprabha Wildlife Sanctuary, Chandauli, UP.' and 02 species (05 specimens) were identified under project 'Taxonomic studies on lichenised non Thelotremoid Indian Graphidaceae'.

Taxonomic description of 11 species under ongoing project 'Flora of Chhattisgarh Vol. I', 39 species under 'Flora of Chandraprabha Wildlife Sanctuary, Chandauli, UP.' and 14 species Under 'Flora of Chhattisgarh Vol. II' were completed.

#### Workshop attended

Sri Vineet Kumar Singh attended a three days workshop on "Essentials in Plant Revisionary studies and Flora Writing" at Botanical Survey of India, Western Regional Centre, Pune from 1st to 3rd December, 2016.

#### Public service rendered

Dr. G.P. Sinha imparted training in lichenology to Sri P.C. Lalremruata, Research Scholar on request of Prof. Ramchandra Laha, Head, Department of Botany, Mizoram University, Aizawl from 29th November to 15th December 2016.

Dr. A.N. Shukla sent 7 seedlings of *Drosera burmanii* to Head of Office, NRC, BSI, Dehradun for multiplication in Botanical Garden and 4 seedlings to the Botany Department, Allahabad University, Allahabad.

Dr. A.N. Shukla, Dr. Ashutosh Verma, Sri V.K. Singh, Dr. Nitisha Srivastava and Dr. A.P. Tiwari assisted educational tour of postgraduate students of Hemwati Nandan Bahuguna Post Graduate College, Naini, Allahabad to BSA herbarium and Garden of BSI, CRC, Allahabad.

#### Miscellaneous

Dr. Arti Garg collected and furnished information on methods of determining the age of a living plant for declaration of heritage sites, in response to the email received from Er. A.K. Pathak, Scientist 'G', HQ regarding query from the PMO.

Dr. Arti Garg reviewed manuscript entitled '*Rhopalocnemis phalloides*: a rare root parasite from Neora Valley National Park (NVNP), West Bengal for ENVIS Newsletter.

Dr. Nitisha Srivastava reviewed a manuscript entitled "Pollen grain fertility and potato hybridization (*Solanum tuberosum* L.) in Tajikistan" for *Net Journal of Agricultural Science*.

#### Publications

Singh, P. and Singh, K.P. 2016. Three new records of lichens in the family graphidoid Graphidaceae for India. *Indian J. Forestry* 39(2): 147–149.

Tiwari, A.P. Lectotypification of *Eriocaulon duthiei* (Eriocaulaceae). *Phytotaxa*, 289 (1): 93–95. 2016.

Verma, A.K., Mishra, M., Mallick, L. and Singh, H. 2016. A meiotic study in *Solanum diphyllum* L. an exotic plant species in India. *Research in Environment and Life Sciences* 9(10): 1270–1271.

– Dr. G.P. Sinha  
Scientist 'E' & HoO

### DECCAN REGIONAL CENTRE, HYDERABAD

Dr. L. Rasingam, Scientist 'C' & HoO conducted one herbarium consultation tour to Central National Herbarium, Howrah from 6th to 12th December 2016. Sri S. Nagaraju, Bot. Asst., conducted one herbarium consultation tour to Southern Regional Centre, Botanical Survey of India, Coimbatore (MH) from 8th to 22nd December 2016. Dr. J. Swamy, Bot. Asst., undertaken one field tour to Sacred groves of Adilabad and Nizambad districts of Telangana from 20th to 25th December 2016 and collected 46 field numbers and also documented about 450 species.

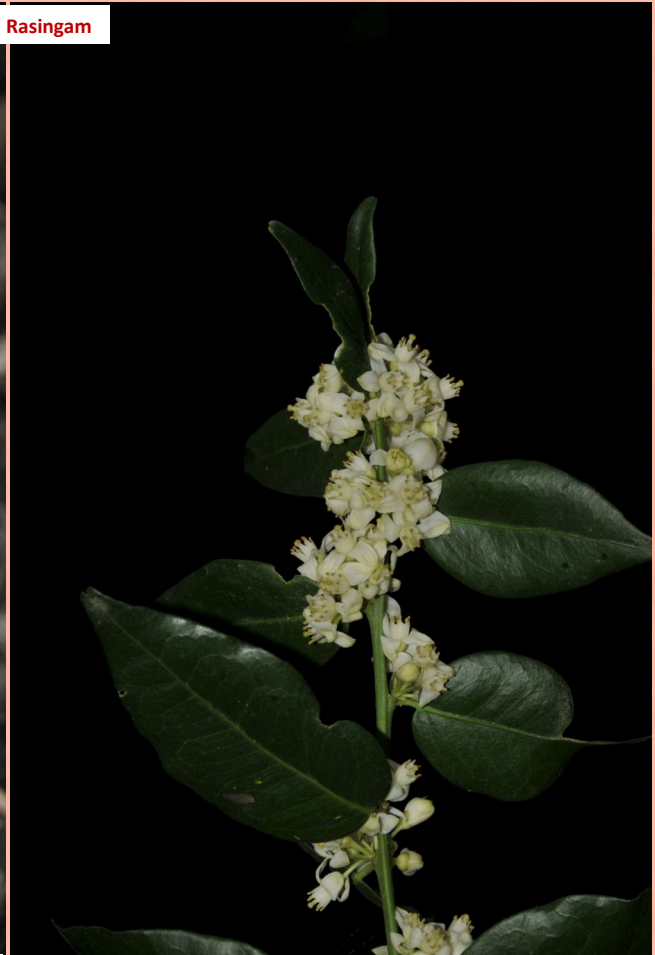
Dr. G. Swarnalatha, Bot. Asst., studied 11 Macrolichen specimens and identified six species in connection with the Inventory of Macrolichen diversity of Odisha State. Sri Nagaraju, identified 12 field numbers for Flora of Seshachalam Biosphere Reserve. Dr. Swamy, identified 30 field numbers for Sacred Groves of Andhra Pradesh. Sri K. Chandra Mohan, SPF, identified 20 field numbers for Flora of Satkosia Tiger Reserve, Odisha. Dr. K. Prasad, RA, identified *Habenaria pelorioides*, *Anoectochilus elatus*, *Dendrobium aqueum*, *Oberonia agastyamalayana* for Studies on taxonomy, phytogeography and conservation of South Indian *Habenaria* (Orchidaceae).



Photo: L. Rasingam

*Aganosma dichotoma* (Apocynaceae)

Photo: L. Rasingam

***Aeginetia indica* (Orobanchaceae)*****Atalantia monophylla* (Rutaceae)**

Dr. Rasingam, documented 15 species in connection with Flora of Nagarjunasagar – Srisailem Wildlife Sanctuary. Mrs. Annamma, SPF, prepared descriptions of 09 species in connection with Flora of Kawal Tiger Reserve, Telangana.

#### **Digitization of herbarium specimens**

In connection with the digitization of specimens housed at DRC, herbarium (BSID), 270 specimens belonging to the families Phyllanthaceae, Euphorbiaceae, Putranjivaceae and Leguminosae were scanned and data entry of label information completed. About 1266 scanned images were converted from TIFF to JPEG format.

#### **Public service rendered**

Dr. Rasingam, reviewed a Ph.D. thesis entitled “Ethnobotanical investigation of Yercaud hills, Eastern Ghats, Tamil Nadu and Phytochemical and Pharmacological studies on *Ficus auriculata* Roxb.” for Periyar University, Salem. Dr. Swamy, identified *Leucas cephalotus* to research scholar of Acharya Nagarjuna University, Guntur, Andhra Pradesh.

#### **Publications**

Chandramohan, K. 2016. A new combination in the Genus *Diplacrum* R. Br. (Cyperaceae) from India. *Bangladesh J. Pl. Taxon.* 23 (2): 261–262.

Chandramohan, K., Prasanna, P.V. and Ramachandra Reddy, P. 2016. *Pancreatium zeylanicum* L. (Amaryllidaceae) – A new distributional record to Odisha state. *Indian Forester* 143 (12): 1239-1240.

Rasingam, L., Karthigeyan, K. and Gogoi, R. 2016. *Impatiens kanchigandhiana*, a new name for *Impatiens nasuta* H.Perrier (Balsaminaceae). *Phytotaxa* 286(2): 121–122.

Swamy, J. and Chandramohan, K. 2016. Two new additions to the United Andhra Pradesh. *Indian Forester* 143(12): 1237–1238.

– Dr. L. Rasingam  
Scientist 'C' & HoO

## EASTERN REGIONAL CENTRE, SHILLONG

During the period one tour was conducted on from 28th November to 8th December 2016 to West and South West Khasi hills district. Dr. Chaya Deori, Scientist 'D' and Sri S.R. Talukdar, Bot. Asst. for the Project - Flora of West and South West Khasi hills district with reference to the sacred groves New Project by Dr. Chaya Deori and Sri S.R. Talukdar and local tours on 24.12.2016 to Pynursula and its surroundings for collection of live plants viz., *Agapetes* sp. (3 individuals.), *Aleuritopteris* sp. (7 individuals), *Alpinia* sp. (8 individuals), *Arundina graminifolia* var. *revoluta* (20 individuals), *Asplenium* spp. (3 spp.) (15 individuals), *Athyrium* sp. (3 individuals), *Aeschynanthus* sp. (2 individuals); *Begonia* spp. (2 spp.) (5 individuals); *Blechnum* sp. (3 individuals), *Bulbophyllum* spp. (2 spp.) (7 individuals); *Davallodes* sp. (6 individuals), *Diplazium* sp. (5 individuals), *Equisetum* sp. (15 individuals),



Photo: D. Vijayan

***Molineria garoense* (Hypoxidaceae)**

*Dryopsis* sp. (5 individuals), *Dryopteris* sp. (3 individuals), *Goodyera* sp. (4 individuals), *Hedychium* spp. (4 spp.) (20 individuals), *Hisiopteris incisa*, (20 individuals), *Lepisorus* sp. (5 individuals), *Liculia* sp. (4 individuals), *Liparis luteola* (30 individuals), *Lycopodium* sp. (8 individuals), *Melastoma* sp. (4 individuals), *Molineria* sp. (4 individuals), *Polysticum* spp. (3 spp.), (20 individuals.), Palm sp. (3 individuals), *Piper* spp. (2 spp.) (7 individuals), *Pteris* sp. (12 individuals), *Pyrrosia* sp. (10 individuals), *Selaginella hookeri* (25 individuals), *Selaginella* sp. (10 individuals), *Selliguea* sp. (2 individuals), *Woodwardia* sp. (7 individuals) for planting in Experimental Botanical garden, Umiam, Barapani by Dr. M. Murugesan, Scientist 'B'. During this period identified 10 species from Flora of Eastern Nagaland by Dr. N. Odyuo, Scientist 'D' & Dr. R. Daimary, Bot. Asst.; described 10 species from flora of Yangoupokpi Lokchao WLS (Manipur) by Dr. A.A. Mao, Scientist 'F' & HoO and listed 14 herbarium specimens from ASSAM by Dr. Chaya Deori and Sri S.R. Talukdar for Flora of West and South-West Khasi hills district with reference to the sacred groves Screening and Listing the plant species collected from Nagaland by earlier workers housed in ASSAM for *Flora of Nagaland* (Vol. I & II) by Dr. N. Odyuo and Dr. D.K. Roy, Bot. Asst. Taxonomic description completed for seven species *Heteroscyphus hyalinus*, *Heteroscyphus inflatus*, *Heteroscyphus palniensis*, *Heteroscyphus pandei*, *Heteroscyphus planus*, *Heteroscyphus tener*, *Lophocolea heterophylla* for Bryoflora of Mizoram and conducted a field tour to Riwai village for collection of *Riccia* on 24.12.2016. A total of three species of *Riccia* collected and also collected 60 nos. of other liverworts and hornworts by Dr. S.K. Singh, Scientist 'D' for Taxonomic Revision of genus *Riccia* (Marchantiophyta) in India. For taxonomy, phylogeny and ex-situ conservation of Micro-fungal diversity from Northeast India with special emphasis on fungi associated with endemic and threatened plants of Meghalaya fungal. 2 one day local tours trips conducted on 12.12.2016 to Lalong and Raliang sacred forest and on 24.12.2016 to Pynursla and nearby forested area, Khasi hills for collection of plant samples for associated fungi and Eighteen fungal isolates were made during the period which are been studied further. Cultures added collection are *Aureobasidium pullulans* as endophyte of *Paramignya micrantha*, *Peyronelina glomerulata* on submerged leaves of *Wallichia* sp., *Circinotrichum* sp. on submerged leaves of *Wallichia* sp., *Spiniger* sp., *Sporochiasma mirabile*, *Bahusutrabeeja* sp., *Periconia*



sp. Two fungal cultures *Pseudotorula goensis* and *Pseudocercosporidium subramanianii* were sent to 'National fungal culture collection of India' at 'Agharkar research Institute' Pune by Dr. Ashish Venkatesh Prabhugaonkar for, Scientist- B. 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 by Dr. M. Murugesan, Scientist – B and Sri L.R. Meitei, Bot. Asst. Observed and recorded phenological data of flowering and fruiting of 37 plant species viz. *Aesculus assamica* Griff., *Albizia lucidor* (Steud.) I.C.Nielsen, *Allamanda cathartica* L. *Alnus nepalensis* D.Don., *Aloe vera* (L.) Burm.f., *Artocarpus heterophyllus* Lam., *Bidens pilosa* L., *Bixa orellana* L., *Bombax ceiba* L., *Caryota urens* L., *Callistemon citrinus* L., *Catunaregam spinosa* (Thunb.) Tirveng., *Clerodendrum colebrookianum* Walp., *Eria stricta* Lindl., *Anoectochilus roxburghii* (Wall.) Lindl., *Bulbophyllum ambrosia* (Hance) Schlechter, *B. gymnopus* J.D. Hooker, *Cephalantheropsis obcordata* (Lindley) Ormerod, *Camelia japonica* L., *Coelogyne flaccida* Lindl., *C. punctulata* Lindl., *C. viscosa* Rchb.f., *Dysoxylum hamiltonii* Hiern, *Elaeocarpus floribundus* Blume, *Eria bambusifolia* Lindl., *Eurya acuminata* DC. *Exbucklandia populnea* (R.Br. ex Griff.), *Garcinia lanceolata* Ridl. *Lagerstroemia speciosa* (L.) Pers., *Ligustrum robustum* (Roxb.) Blume, *Prunus cerasoides* D.Don., *Schima wallichii* (DC.) Korth., *Taxus wallichiana* Zucc., *Terminalia chebula* Retz., *Thunbergia coccinea* Wall., *Toona ciliata* Roem. and *Zeuxine affinis* (Lindl.) Benth.ex Hook.f. in Experimental Botanical garden, Barapani during this period. Micro-propagation of RET Plants of Northeast India by Dr. A. A. Mao, Scientist-F & H.O.O & L. Ibemhal Chanu, Bot. Asstt. Reading for Lab to land transferred of *C. tigrinum* (about 400 plants) in greenhouse are maintained. Data analyze, interpretation, literature survey for *Armadorum senapatianum*, *C. tigrinum*. Statistical analysis of *A.senapatianum*, *C. tigrinum*. Subcultured seedlings of callus of *Rhododendron coxianum*, *A.senapatianum* ( app.50 nos.), *C. tigrinum* (app. 100 nos.) Experiment on *Illex khasiana* is set up.. For Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of Selected Species by Dr. Deepu Vijayan, Scientist- B, Genetic fidelity assessment of *in vitro* raised plants of *Rhododendron wattii* was completed using 10 ISSR primers. Well rooted *in vitro* raised plants of *Pyrenaria khasiana* was transferred to green house for acclimatization (20 Nos). Continued the experiments using the nodal segments of *Pyrenaria khasiana* in Woody Plant Medium containing different concentrations of BA.

### Public service rendered

Identified about 90 samples of specimens received from various institutions.

### Workshop attended

Dr. S.K. Singh attend one day seminar cum workshop on "Implementation of Biodiversity act & rules in conserving biodiversity" organised by Forest Department, Meghalaya at Multi Use Convention centre NEHU on 16.12.2016.

### Visitors/students

Four research scholars, thirty six students, three lecturers, one PDF and five other visitors from various Institutions, Colleges and Universities visited the Centre.

### Publication

Meitei, L.R., Mao, A.A. and Deori, C. 2016. Orchids of Yangoupokpi Lokchao Wildlife Sanctuary, Manipur, India. *D'Orchidophilie*. 47(4): 317–333.

Roy, D.K. & Vijayan, D. 2016. *Molineria garoense* (Hypoxidaceae), a new species from Meghalaya, India. *Pleione* 10(2): 366–369.

Talukdar, S.R. and Deori, C. 2016. Life forms and biological spectrum of the flora of Laokhowa Wildlife Sanctuary, Assam, India. *NeBio* 7(4): 20.

Singh, S.K. and Kumar, S. 2016. A preliminary study on liverworts and hornworts of Tripura, North-east India. *Nelumbo* 58: 131-152. (online version).DOI: 10.20324/nelumbo/v58/2016/106363.

Kumar, S. and Singh, S.K. 2016. *Cheilolejeunea vittata* (steph. ex G. Hoffm.) R.M. Schust. & Kachroo (Lejeuneaceae: Marchantiophyta) – a newly recorded species from India. *Bangladesh J. Plant Taxon*. 23(2): 209–213.

– Dr. A.A. Mao  
Scientist 'F' & HoO

## NORTHERN REGIONAL CENTRE, DEHRADUN

Dr. S.K. Srivastava, Scientist 'E' & HoO conducted herbarium consultation tour to NBRI, Lucknow (LWG) and CDRI, Lucknow from 5th to 12th December 2016 for the project "Assessment of Rare and Threatened species in Northern Himalayas" worked the exsiccates of more than 300 specimens belonging to RET species and recorded their distribution data.



A panoramic view of GHNP, Himachal Pradesh



A view of Tirthan river, GHNP, Himachal Pradesh



*Euonymus tingens* growing in GHNP, Himachal Pradesh



*Pinus wallichiana* growing in GHNP, Himachal Pradesh

### Herbarium Specimens Identified

Identified total 81 species and made descriptions for 67 species of plants under the projects on Flora of Uttarakhand Vol. V; Floristic Diversity and Phytosociological study of Simbalbara National Park; Flora of Nandhour Wildlife Sanctuary; Flora of Sonanadi Wildlife Sanctuary; Flora of Sechu-Tuan Nala Wildlife Sanctuary, Himachal Pradesh; Trees of Dehradun city and its vicinity; Revision of family Cyatheaceae and genus *Adiantum* in India.

### Meetings/seminar/conference attended/lecture delivered

Dr. Puneet Kumar Scientist 'B', Delivered a Guest Lecture on the topic "Cytology in relation to taxonomy or cytotaxonomy" in a seminar "Modern trends in Applied Botany" organised by Dolphin (PG) Institute of Medical and Natural Sciences, Dehradun on 03.12.2016.

Dr. K. Ambrish, Scientist 'D', attended a National Conference on "Caste, Culture, Power: Indian Society" from 14th to 16th December 2016 organized by Anthropological Survey of India, N.W. Regional Centre, Dehradun, Uttarakhand.

### Public service rendered

Identified one specimen of *Ficus semicordata* for Dr. Anamika from Himalayan Ayurvedic College, Dehradun.

### Visitors/students

Dr. U.C. Bhattacharya, former Joint Director, BSI, visited the centre.



Photo: Devraj Agarwal

**Dr. U.C. Bhattacharya along with Dr. H.J. Chowdhery and Dr. S.K. Srivastava consulting herbarium at BSD**



**Dr. U.C. Bhattacharya planted *Aquilaria malaccensis* in NRC office Campus, Dehradun**

### Publications

Singh, V., Srivastava, S.K. and Tiwari, L.M 2016. Floristic Assessment of different habitat of Parvati Aranga Wildlife Sanctuary and adjacent Tikri forest area, Gonda Uttar Pradesh, India. *Trop. Pl. Res.* 3(3): 543–550.

**Dr. S.K. Srivastava**  
Scientist 'E' & HoO

## SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

Dr. Dinesh Kumar Agrawala, Scientist 'C' & HoO identified and illustrated one Orchid species for the project "Red listing of Orchids of Eastern Himalaya as per IUCN criteria" and 50 specimens were finalized in respect of their identity, label data, finding geo-coordinates and entering in the excel sheet.

Dr. Sankararao Mudadla, Scientist 'B' identified 18 species for the project "Flora of sacred groves of East Sikkim"

Dr. David Lalsama Biate, Scientist 'B' identified five species for the project "Flora of Sikkim - Family Onagraceae".

Sri Sundar Kumar Rai, Botanical Assistant, identified 11 species from 19 unidentified specimens.

Sri Subash Pradhan, Field man, identified six species from six unidentified specimens.

### Digitisation of Herbarium specimens

680 herbarium sheets were scanned and meta data of 660 sheets belonging to Rutaceae and Icacinaceae Family was entered into Excel -worksheet.

### Meeting/programme attended

Conducted Digital Payment awareness work shop at SHRC on 06.12.2016

Dr. D.K. Agrawala, attended Govind Ballabh Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD) Sikkim Unit as chairman of interview board for selection of project staff on 19.12.2016.



**Digital Payment awareness workshop at SHRC, BSI, Gangtok**

### Visitors/students

Dr. A.A. Mao , Scientist 'F' & HOO, ERC, Shillong visited SHRC from 1st to 3rd December 2016.

Sri Sarang A. Bokil Scholar from Nowrosjee Wadia College, Pune and Sri Usmangai A. Attar from Shivaji University Kolhapur visited this center for herbarium consultation on 05.12.2016.

Dr. UmeshKumar L. Tiwari, Scientist 'B', APRC, Itanagar visited SHRC for herbarium consultation during 6th to 22nd December 2016.

Sri Santosh Kumar Rana Magar, Ph.D. Scholar from Tribhuvan University, Kathmandu visited this centre for herbarium consultation on 27.12.2016.

– Dr. D.K. Agrawala  
Scientist 'C' & HoO

## SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. M. Palanisamy, Scientist 'D' and Sri S.K. Yadav, Bot. Asst. conducted a field tour to Karnataka coastal regions from 22nd November to 3rd December 2016 and vouched a total of 384 field numbers of seaweeds and preserved 145 field numbers of live specimens in wet forms. They also identified 69 field numbers of seaweeds from previous collection. Dr. C. Murugan, Scientist 'D' and Dr. S. Arumugam, Bot. Asst. conducted



Photo: C. Murugan

Grass land with shola forest at Upper Manalar



Shola forest at Kadamali Kundu range



Photo: C. Murugan

Grasslands at Upper Bavani area



*Bulbophyllum barbatum*

a field tour to Nilgiris from 29th November to 4th December 2016 and vouched 34 field numbers in connection with the project "Cyperaceae of Tamil Nadu". They also undertaken a field tour to Meghamalai WLS, Tamil Nadu from 12th to 21st December, 2016 and vouched 179 field numbers of plants. Sri A. Ravi Kiran, Bot. Asst. conducted a field tour to Kodaikanal WLS, Tamil Nadu from 8th to 20th December 2016 and vouched 126 field numbers.



Photo: C. Murugan

*Aganosma cymosa*



*Pavetta wightii*



Photo: M. Palanisamy

Luxuriant growth of seaweeds at St. Mary's island



*Padina boergesenii* (Seaweed)



Photo: M. Palanisamy

*Caulerpa peltata* (Seaweed)



*Caulerpa taxifolia* (Seaweed)

### Herbarium Identification

Dr. K.A.A. Kabeer, Scientist 'D' and Sri Ravikiran, Bot. Asst. identified 34 field numbers from previous collection. Dr. J.H. Franklin Benjamin, Scientist 'C' and Mr. Rakesh G. Vadhyar, Bot. Asst. identified 41 field numbers for Flora of Kanniyakumari WLS. Dr. M.Y. Kamble, Scientist 'D' and Dr. T. Saravanan, Bot. Asst. consulted MH and referred literature and herbarium specimens of the families Bromeliaceae to Burmanniaceae for the project *Flora of Kerala*, Vol. 6. Dr. C. Murugan determined 13 herbarium sheets belonging to the genera *Syzygium*, *Eugenia* and *Uvaria* at MH.



Photo: A. Ravi Kiran

*Alphonsea sclerocarpa*



*Crotalaria beddomeana*

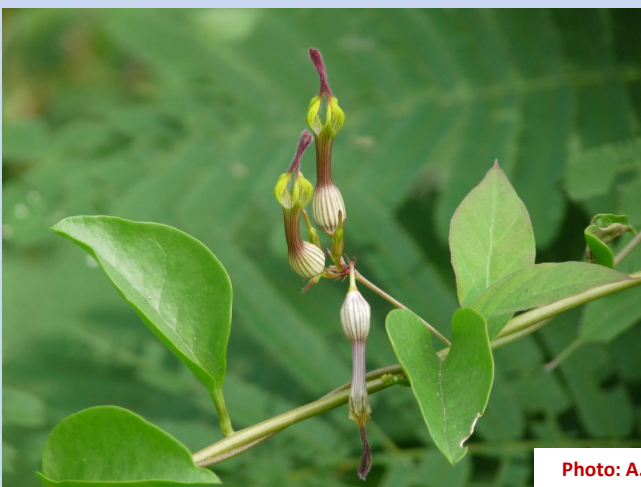
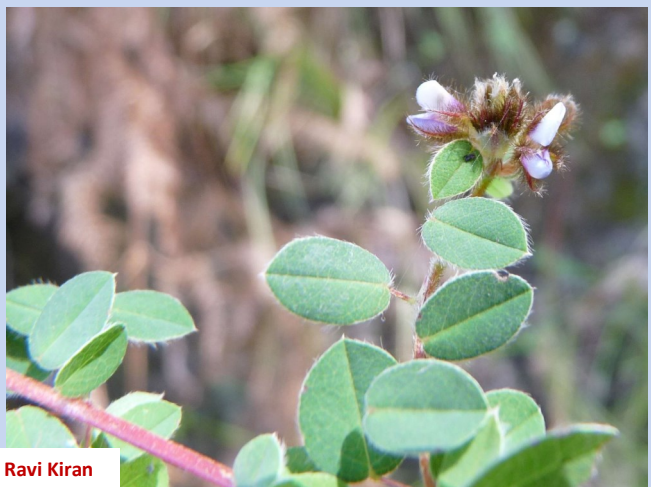


Photo: A. Ravi Kiran

*Ceropegia candelabrum*



*Leptodesmia congesta*

### **Ex-situ conservation**

Dr. S. Kaliamoorthy, Scientist 'D' and his team in the National Orchidarium and Experimental Garden (NOEG), Yercaud, introduced 2 samples of *Holigarna grahamii*, multiplied 33 samples of orchids and other angiosperms, repotted 58 samples, developed 20 cuttings and 24 seedlings and recorded the phenological data of 31 species including 22 orchids and 9 other angiosperms.

### **Digitisation of Herbarium specimens**

1245 herbarium sheets belonging to families Euphorbiaceae and Asteraceae were pasted with barcode labels at MH.

### **Scanning Electron Microscopy (SEM)**

Dr. G.V.S. Murthy, Scientist 'G' & HoO and Dr. J.V. Sudhakar, Bot. Asst. collected samples of 17 species of *Cyperus* for nutlets study under SEM. Dr. J.V. Sudhakar captured 12 SEM images of achenes of 4 species of *Ficus* i.e. (*Ficus nemoralis* var. *nemoralis*, *F. recurve*, *F. andamanica* and *F. lacor*).

### **Public Service Rendered**

During this month, 50 plant specimens were identified for research scholars and students of various institutions.

4 digital images of *Cleome chelidonii* var. *pallai* – Clemoaceae were sent to Ms. Aarathy K.S., Dept. of Botany, University of Calicut, Kerala.

One Type specimens of *Commelina badamica* (Commelinaceae) received from Mayur D. Nandikar, Satara and 3 Gift specimens of *Dunbaria punctata* (Leguminosae) received from Dr. Anoop. K. Balan, Indian Cardamom Research Institute, Idukki, Kerala have been deposited into the Type section.

Dr. M. Palanisamy evaluated an M.Phil. thesis entitled, "Mangrove community zonation and seasonal soil salinity gradient mapping of the Pichavaram Mangrove forest, Southeast coast of India" submitted by the Dept. of Marine Biology, Annamalai University. Dr. Palanisamy also delivered a lecture on "Bio resources of Antarctica" at Department of Botany & Microbiology, A.V.V.M. Sri Pushpam College (Autonomous) Poondi, Thanjavur on 15.12.2016.

#### Meetings/programmes attended/conducted

Dr. J.H. Franklin Benjamin is attending the 16th Foundation Training Programme for Scientists and Technologists at Indian Institute of public Administration (IIPA), New Delhi from 21st November 2016.

Quarterly meeting of the Official Language Implementation Committee (OLIC) was held at SRC, BSI, Coimbatore on 28.12.2016.

Dr. M. Palanisamy attended a National Conference on "Genomics and Proteomics in Bioprospecting – Role in Healthcare Development" held at the Department of Biotechnology, Dr.N.G.P. Arts & Science College, Coimbatore on 21.12.2016 and delivered a lecture "Seaweed Resources of India coast – Role in Bioprospecting".

#### Visitors/students

During this month, a total of 225 students / research scholars and 6 scientific personnel / officials visited the museum, herbarium and library of this regional centre whereas 451 persons in 57 parties, including 24 students from the Dept. of Sericulture, Tamil Nadu Agriculture University, Coimbatore visited the NOEG, Yercaud.

#### Publications

Sathiyaseelan, R., Prabhu, S. and Murugan, C. 2016. Gisekiaceae- A family record for Andaman and Nicobar Islands. *Ind. J. Forest* 39(30): 230–294.

– Dr. C. Murugan  
Scientist 'D' & HoO

### WESTERN REGIONAL CENTRE, PUNE

Dr. J. Jayanthi, Scientist 'D' conducted a field tour to BRT Wildlife Sanctuary, Karnataka from 12th to 26th December 2016 and collected a total of 202 field numbers. Smt. Shreya Sengupta undertook a fungal exploration tour to collect microfungi from BRT Wildlife Sanctuary, Karnataka from 12th to 26th December 2016 and collected 151 samples.

Dr. Sukumar Bhakta, Botanical Assistant conducted a field tour to different thermal springs of Maharashtra covering districts such as Nanded, Raigad, Thane, Palghar and Ratnagiri Karnataka from 21nd to 30th December 2016 and collected 105 algae samples.

Dr. Rashmi Dubey, Scientist 'D' conducted a herbarium consultation tour to Jawaharlal Nehru Tropical Botanic Garden and Research Institute, Palode, Trivandrum from 19th to 24th December 2016.

#### Herbarium specimen identification

Dr. C.R. Jadhav, Botanist, Identified 20 field nos. of Someshwara WLS. Dr. Rashmi Dubey, Scientist 'D' identified 12 fungal species collected from Sanjay Gandhi National Park along with its 10% peripheral area. Dr. A. Benniamin, Scientist 'D' identified a total of 8 pteridophyte species from different Wild Life Sanctuaries from Karnataka. Shri D. Jesubalan, Botanical Assistant identified 5 pteridophyte species collected from Pushpagiri Wildlife Sanctuary, Karnataka.



Photo: J. Jayanthi

View of Malki betta in BRT Wildlife Sanctuary,  
Karnataka



Photo: J. Jayanthi

Early flowering of *Butea monosperma* in BRT Wildlife Sanctuary, Karnataka



Photo: S. Bhakta

Collection of algae in Malki betta in BRT Wildlife Sanctuary, Karnataka



Cyanobacteria forming mat

### Public service rendered

During this month 20 plant species were identified for issuing authentication certificates to students from B. Pharm, M. Pharm. colleges, Ph.D. and P.G. students from different institutions.

### Meetings /seminars /programmes/attended

Organised a collaborative workshop along with Naoroji Godrej Centre for Plant Research (NGCPR), Shirwal, Satara on "Interactive talks and Workshop on Essentials in Plant Revisionary studies and Flora writing" at WRC, BSI, Pune from 1st to 3rd December 2016. About 58 research students from almost all parts of India participated in this workshop. Besides 15 resource persons delivered talks on different topics. Scientific staff of WRC also participated in the workshop.

Dr. P. Lakshminarasimhan attended the Inter Agency Co-ordination meeting on "Strengthening Wildlife Law Enforcement" at Western Region held at Pune on 08.12.2016.

Dr. P. Lakshminarasimhan attended the inaugural function of National Conference on "Plant Diversity: Past and Present-2016" (from 30th to 31st December 2016) organized by Department of Botany, Sant Gadge Baba Amravati University, Amravati as Chief Guest. Dr. Lakshminarasimhan delivered the inaugural address and released journal *Botanique* vol. 19(1 & 2), 2015 and vol. 20 (1 & 2), 2016.

Dr. Jeewan Singh Jalal, Scientist 'D' attended the 3rd National Hindi Science Conference organized by Vigyan Bharati at Rajasthan University, Jaipur during 16-17th December 2016 during which Dr. Jalal made a powerpoint presentation in Hindi on महाराष्ट्र प्रदेश के अधिपादपीय ऑर्किड्स की वर्तमान स्थिति, वितरण एव वासस्थान.

Dr. Rashmi Dubey, Scientist 'D' has been invited in National workshop on "Mushroom bioprospecting and its role in women empowerment and social upliftment in tribal area" organised by Gujarat State Biotechnology Mission, Gujarat Department of Science and Technology at Dang, Gujarat and Forest Department, Dang Gujarat on 30.11.2016.

### Publication

Bhakta, S., Das, S.K. and Adhikary, S.P. 2016. Algal Diversity in hot springs of Odisha. *Nelumbo* 58: 157-173.

**Dr. P. Lakshminarasimhan**  
Scientist 'E' & HoO



## Glimpses of “Interactive talks and Workshop on Essentials in Plant Revisionary studies and Flora writing” at WRC, BSI, Pune



PLANT OF THE MONTH



*Coelogyne cristata* Lindl. (ORCHIDACEAE) known as Snow Queen is native to Eastern India and Vietnam. It is an epiphytic orchid with white colour flowers preferred by the orchid lovers and cultivated in the gardens.

By Dr. B.K. Singh

# THE ECHO OF INDIA

PHONE : 03192 230892/232230 • FAX : 03192 234325 • E-MAIL : echopress@gmail.com/nd@echoofindia.com

DAILY FROM KOLKATA • PORT BLAIR • SILIGURI

PAGES 12

PORT BLAIR • FRIDAY • DECEMBER 2, 2016

## Hindi workshop



PORT BLAIR, DEC 1--/ The Botanical Survey of India, Andaman & Nicobar Regional Centre, Port Blair observed a two-day 'Hindi workshop' on November 29 and 30 for generating interest, encouragement and awareness about the use of Hindi in the official work amongst the officers and

employees. Inaugurating the Hindi workshop, Dr. Lal Ji Singh, Deputy Director & HOO, emphasized about various aspects of official language for its implementation in letter and spirit. Dr. Sanjay Mishra, Hindi Officer and Scientist B of this office was the resource person for this occasion.

During this workshop he gave training on Official letter writing in Hindi to all the staffs. Dr. Jagadeesh Ram T.A.M., Scientist -D welcomed the gathering and the inaugural session which concluded with the vote of thanks proposed by Shri Gautam Anuj Ekka, Pres. Asst.



Dr. P. Lakshminarasimhan releasing the Botanique journal at Amaravati University

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

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Scientist 'D', CNH, BSI, Howrah