

# BSI NEWSLETTER

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**Botanical Survey of India**  
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Kolkata – 700 064



## HEAD QUARTERS, KOLKATA

Dr. Kanad Das, Scientist 'D' made a macrofungal survey from 30th July to 13th August 2018 to different parts of East districts aiming to survey (covering mycobiota of mid rainy season), collection, macro- (field) and micromorphological characterization and to undertake chemical spot tests of wild mushrooms for identification. The exploration was mainly focused on the wild mushrooms of subtropical to subalpine forest areas namely, 1) Gangtok, 2) Gnathang, 3) Gnathang Firing Range Forest, 4) Opposite to the Firing Range Forest, 5) Tugla valley, 6) Memainchu, 7) Kyangnosla, 8) Panthang, 9) Churten and 10) Chipsu. Specimens of total 63 field numbers were collected. All the materials are well preserved and under study. A total of 65 field numbers of wild mushrooms were collected. The dominant mushroom genera were *Russula*, *Amanita*, *Lactarius*, *Cortinarius*, *Trogia*, *Gomphidius*, *Entoloma*, etc.

In connection with the studies on, "Hot spring Algae of Rajgir and Mungar, Bihar", "Studies on Wild Mushrooms of Sikkim", "Wood rotting fungi of Rajmahal hills" and "Liverworts and Hornworts Flora of Darjeeling District, West Bengal" identification of specimens were done by the scientific officials. Besides, illustrations/drawings, descriptions and microphotographs were made.

Dr. Devendra Singh, Scientist 'D' prepared the camera lucida illustration and photoplate of *Guembelia longirostris* (Hook.) Ochyra & Zamowiec (D. Singh 70802) collected from Larsemann Hills, East Antarctica. Dr. Singh also prepared the data-base of 27 liverworts specimens submitted by Sumira Mukhia from North Bengal University collected from Darjeeling.

Dr. M.E. Hembrom, Botanist prepared ArcGIS map for the species *Navisporus floccosus* (Bres.) Ryvarden (Polyporaceae) and *Pleurocybella* sp. 1 (Marasmiaceae).

### Public service rendered

Dr. Monalisa Dey, Scientist 'B' reviewed a research paper for *Journal of Bryology*.

Dr. A.B.D. Selvam, Scientist 'D' pharmacognostically studied and authenticated a plant sample as Saffron threads of *Crocus sativus* L. (Iridaceae), which was received from Directorate of Revenue Intelligence (DRI), Kolkata.

Dr. A.B.D. Selvam pharmacognostically studied and authenticated a plant sample as roots of *Moringa oleifera* Lam. (Moringaceae), which was received from Netaji Subhas Chandra Bose Cancer Research Institute, Kolkata.

Dr. A.B.D. Selvam pharmacognostically studied and identified two wood samples as *Pterocarpus santalinus* L.f. (Papilionaceae), which were received from Directorate of Revenue Intelligence (DRI), Mumbai.

### Lectures delivered

Dr. A.B.D. Selvam visited Environment Protection Training & Research Institute, Hyderabad and delivered a lecture on 'Identification of illegally traded plant species using Pharmacognosy techniques' for GSDP's Parataxonomy training under Green Skill Development programme on 30.08.2018.

### Publications

Gupta, R.K. 2018. Mini review: Thermal algae of India with special reference to Jharkhand. *Biospecta* 12(2): 15–20.

Hosen, M.I., Mehmood, T., Das, K., Kudzma, L.V. and Bhatt, R.P. 2018. *Amanita tullossiana*, a new species, and two new records of *Amanita* section *Lepidella* from north-western Himalaya, India. *MycKeys* 37: 73–92.

Singh, D., Das, S.K. and Pande, A. 2018. New distributional record of *Obelia longissima* (Campanulariidae) from Larsemann Hills, East Antarctica. *Indian J. Geomarine Sci.* 47(8): 1692–1694.

## CENTRAL NATIONAL HERBARIUM, HOWRAH

Dr. Rajib Gogoi, Scientist 'D' conducted field tour to Sikkim and Darjeeling Himalaya from 10th to 26th October 2018 and collected 17 species of *Impatiens* L. (Balsaminaceae) and seven species of *Elatostema* J.R. Forst. & G. Forst. (Urticaceae) with altogether specimens of 28 field numbers.

### Identification of herbarium specimens

Dr. Vinay Ranjan, Scientist 'D' and Sri Anant Kumar, Bot. Asst. identified specimens of 15 field numbers and 11 species collected from Neora Valley National Park, Darjeeling district, West Bengal.

Sri P.P. Ghoshal, Botanist identified 12 species collected from of Betla National Park, Latehar, Jharkhand.

### Public service rendered

Dr. Subir Bandyopadhyay, Scientist 'B' provided PDF of four pages from *Bull. Bot. Surv. India* 16(1–4): 144–147. 1974 to Dr. Supriyo Basak, Kunming Institute of Botany, Chinese Academy of Sciences, China.

Dr. Bandyopadhyay provided 86 pages literature about Convolvulaceae of Malaysia, IV. The genera *Mina*, *Lepistemon*, *Stictocardia* and *Argyreia*. *Blumea* 5: 339–411 and *Blumea* 6: 337–348 to Pramod Lawand, Shivaji University, Kolhapur.

Dr. Bandyopadhyay provided information regarding four authors of plant name viz., Dr. H.L. Chakravarty, Jayanta Ghosh, Mrinmoy Middy and Mini Prasad for incorporation in IPNI.

Dr. Bandyopadhyay provided some photographs of interesting plants growing in AJCBIBG to Ms. Nivedita Saha, a student of M.Sc. Museology, Calcutta University.

### Visitors/students

20 students of class XI-th and XII-th standard from Bargram Anchal Vidyapith (H.S.), West Bengal on 01.08.2018 on educational tour.

54 students of class XI-th and XII-th standard from Bandel Girls' Mission (H.S.), Hooghly, West Bengal on 07.08.2018 on educational tour.

Ms. Nivedita Saha, Department of Museology, University of Calcutta visited to get information about Roxburgh's Icons and other Archival materials preserved in Monocot Type section on 28.08.2018.

46 students of class XII-th standard from Pancharul Shrihari Vidyamandir, Howrah on 31.08.18 on educational tour.

### Publications

Pathak, M., Kumar, R, Singh, M.K., Maurya, O.N. and Bharati, K.A. 2018. A review on traditional larvicidal plants. *Mintage J. Pharmaceut. Med. Sci.* 7(3): 1–9. (ISSN: 2320-3315).

Kumar, A., Venu, P. and Rao, Y.V. 2018. Distributional Notes on *Merremia aegyptia* (L.) Urb. (Convolvulaceae) and *Vachellia leucophloea* (Roxb.) Maslin (Leguminosae: Mimosoideae). *Ann. Pl. Sci.* 7(8): 2379–2381.

Gogoi, R., Kumar, A. and Adamowski, W. 2018. Notes on *Impatiens sikkimensis* (Balsaminaceae) and its recollection after a century. *Nelumbo* 60 (1): 23-25.

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

## INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

As a part of preparing a database of herbarium specimens at BSIS, 195 numbers of Dicot herbarium specimens were listed and documented.

### Public service rendered

Under the Narcotic Drugs & Psychotropic Substances (NDPS) Act, three samples received from West Bengal Police were identified.



Photo: ISIM

Students of Sinthi Kasturba Kanya Vidyapith at Central Courtyard of Indian Museum, Kolkata



Dr. Kangkan Pagag delivering a talk on Natural Rubber plants and its services in the mankind to students



Photo: ISIM

Dr. M. Bhaumik educating students about role of herbarium specimens and Botanical History of India at ISIM, BSI



Ms. Sudeshna Datta guiding students about plant derived gums resins at ISIM, BSI, Kolkata



Sri S.K. Sharma explaining school students about botanical exhibits during their visit to ISIM, BSI, Kolkata

### Awareness programme/workshop/seminar organized/attended

A group of 44 students (class –XI & XII) of Sinthi Kasturba Kanya Vidyapith, Kolkata visited Botanical Gallery and Gallery on Botanical History on 04.08.2018 under Environmental Education Awareness Programme. Ms. Sudeshna Datta, Sri B.C. Dey and Sri S.K. Sharma guided school students during their visit followed by a talk on 'Natural Rubber plants and its services in the mankind' delivered by Dr. (Ms.) Kangkan Pagag. 72nd Independence Day's Flag hoisting ceremony at AJCBIBG, BSI, Howrah was attended by Dr. M. Bhaumik, Scientist 'D' & HoO on 15.08.2018.

### Publication

Datta, S., Seal, T., Sinha B.K. and Bhattacharjee, S. 2018. RP-HPLC based evidences of rich sources of Phenolics and water soluble in an annual sedge *Cyperus compressus*. *J. Phytopharmacology* 7(3): 305–311.

– Dr. Manas Bhaumik  
Scientist 'D' & HoO

## ARID ZONE REGIONAL CENTRE, JODHPUR

Specimens of 142 Field numbers has been identified during this period, under report, which were collected for different projects.

### Celebration of Independence Day 2018

Celebrated Independence Day at AZRC, BSI, Jodhpur by hoisting National Flag. Plantation programme was also organized, all the BSI officials and GSDP trainees were participated and planted rare, threatened and economically important plant species in the botanical garden, AZRC, BSI, Jodhpur on 15.08.2018.



Sri Vinod Maina hoisting National Flag during Independence Day celebration at AZRC, BSI, Jodhpur



Plantation during Independence Day celebration at AZRC, BSI, Jodhpur



Sri Vinod Maina delivering lecture at Arogya Sanjivani Seminar organized by Arogya Bharti, Jodhpur

### Seminar attended

Sri Vinod Maina, Scientist 'D' & HoO and Dr. C.S. Purohit, Scientist 'B' attended International Seminar 'Abhinav Bharat-Concept & Form' on 4th & 5th August 2018 at Adarsh Vatika, Jodhpur, organized by Rajasthan Sanskrit Academy, Jaipur. Dr. C.S. Purohit delivered a lecture on "Phyto-diversity of Indian desert and conservation of rare plants".

Sri Vinod Maina, Dr. C.S. Purohit, Dr. P. Hari Krishna and Sri Ravi Prasad attended seminar 'Arogya Sanjivani' organized by Arogya Bharti, Jodhpur on 11.08.2018. Sri Vinod Maina invited as chief guest for this programme.

### Public service rendered

Identified 13 plant specimens brought by Dr. Prem Prakash Jangid, PDF, Dept. of Botany, Delhi University, New Delhi on 21.08.2018.

### Visitors/Students

Ms. Vandana, Assistant Professor, Ms. Illham Bano and Ms. Vinod Deora, Research Scholars from JNV University, Jodhpur visited on 21.08.2018.

Dr. N. Sasidharan, Deputy Director, NMPB RCFC, Southern region, KFRI, Thrissur, Kerala visited Botanical garden and Museum on 28.08.2018.

### Publications

Purohit, C.S., Kumar, R., Maina, V. and Prasad, V.P. 2018. *Bulboschoenus planiculmis* (F. Schmidt) T.V. Egorova (Cyperaceae): Recollection from Gujarat, India after sixty years. *Ind. J. Forestry* 41(1): 27–29.

Borude, D.B., Gosavi, K.V.C., Purohit, C.S. and Chandore, A.N. 2018. *Eleocharis wichurae* (Cyperaceae): A new record for India. *Rheedea* 28(1): 62-64.

– Sri Vinod Maina  
Scientist 'D' & HoO

## CENTRAL REGIONAL CENTRE, ALLAHABAD

For the project 'Studies of fossil and living plants with reference to the impact of climate change on flora of Gangetic Plains and Central India', Dr. Arti Garg made interpretations and palynological correlations of living and fossil recovered pollen grains of the genus *Ludwigia* L. in India.

For the project, 'Cytotaxonomical studies of selected taxa of Indian subtribe Cassiinae', Dr. Ashutosh Verma completed Scanning Electron Microscopic studies for seed morphology of nine species of subtribe Cassiinae.

A total of 41 specimens were identified in connection with the project, 'Identification of old unidentified specimens of BSA'.



Photo: A.N. Shukla

Fruits of *Saraca asoca* in Garden of CRC, BSI, Allahabad

### Public service rendered

Dr. A.N. Shukla evaluated a thesis, "Diversity of Vegetation of Dubri Wild Life Sanctuary of Sidhi District with special reference to Rare and Endangered Plants" for A.P.S. University, Rewa, Madhya Pradesh.

Dr. Shukla also reviewed a manuscript for *Indian Forester*.

### Maintenance of Herbarium

Eighteen specimens were studied and six lichen specimens of various Indian Herbaria were authenticated by Dr. Pushpi Singh.

Led by Dr G.P. Sinha, Scientist 'E' & HoO a major reorganization of the Herbarium (BSA) was completed. A total of 883 specimens, 750 and 132 specimens respectively were accessioned by Dr G.P. Sinha and Dr. Nitisha Srivastava. While 2900 accessioned specimens were sorted out into families and incorporated mainly by Dr. G.P. Sinha, followed by Sri Vineet Kumar Singh, Dr. A.N. Shukla, Dr. A.K. Verma and Dr. Arti Garg.



Photo: A.N. Shukla

Herbarium re-arrangement work in CRC, BSI, Allahabad

### Meeting/training attended

Dr G.P. Sinha attended Uttar Pradesh Wildlife Board meeting, chaired by Hon'ble CM of Uttar Pradesh at Lucknow on 30.08.2018.

Dr. A.K. Verma attended 'Training/workshop on PFMS Applications, EIS Module, CDDO e-payment Module, NTRP module, Bhavishya and Gov. Payments & accounting organized by ERC, BSI, Shillong from 1st and 2nd August 2018.



Photo: CRC



Visit of students of Ewing Christian College, Allahabad to Herbarium and Garden of CRC, BSI, Allahabad

### Visitors/students

A group of 27 students of Bot. Sem. III, Ewing Christian College, Allahabad along with two faculty members visited CRC, BSI. Students were taken to Herbarium, Library and Associated Garden and were briefed about the activities of BSI by Dr. A.N. Shukla, Dr. Nitisha Srivastava and Sri Vineet Kuar Singh. Dr. G.P. Sinha clarified to the students about Flora, Monograph, Botanical Keys and related aspects as desired by the faculty members.

### Publications

Jagadeesh Ram, T.A.M. and Sinha, G.P. 2018. Additional lichen records from the Andaman and Nicobar Islands – 4. *Indian J. Forest.* 41(2): 207–215.

Verma, A.K., Mishra, M., Singh, H. and Bharti, K.A. 2018. Database on chromosome count of some Indian plants. *Chromosome Bot.* 13 (1): 37–60.

Kumar R., Verma A.K., Bharti K.A. 2018. Checklist of Angiosperms in Shahjahanpur, Uttar Pradesh, India. *Indian J. Forest.* 41(2): 179–194.

Tiwari, A.P., Shaikh, M., Lawand, P.R. and Shukla, A.N. 2018. New distributional records of Poaceae for Chhattisgarh. *Indian J. Forest.* 41(2): 217–218.

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

## EASTERN REGIONAL CENTRE, SHILLONG

During this period two field tours were conducted by Dr. M. Murugesan, Scientist 'B' to Upper Shillong on 12.08.2018 and Sumer forest area on 13.08.2018 for collection of RET plants to conserve in Experimental Botanical Garden, Barapani.

For taxonomic Revision of Genus *Riccia* (Marchantiophyta) in India by Dr S.K. Singh, Scientist 'D' & HoO identified six samples of *Riccia* belonging to three species from Gujarat sent by Dr. Sachin Patil. Taxonomic description of *Riccia abuensis*, *Riccia jodhpurensis*, *Riccia manglorica* and *Riccia grollei* (from Kerala) completed.

During this period 20 specimens listed and one field tour conducted from 08th to 14th August, 2018 for Flora of West & South-West Khasi hills district, Meghalaya with reference to the sacred groves by Dr. Chaya Deori, Scientist 'D' and Dr. S.R. Talukdar, Bot. Asst., 12 species identified for Flora of Eastern Nagaland by Dr. N. Odyuo, Scientist 'D' and Dr. R. Daimary, Bot. Asst. and eight species documented for Flora of Nagaland (Vol. I & 2) by Dr. N. Odyuo and Dr. D.K. Roy, Bot. Asst.



Photo: ERC

*Pyrenaria diospyricarpa* var. *camelliiflora* (Theaceae)

For the project, "Phytochemical Screening for DNA barcoding and Phylogenetic analysis of 20 selected endemic plant species of Northeast India and Phytochemical Screening of 11 medicinal Plants" by D. Vijayan Scientist 'C' and Dr. D.K. Roy subcultured *in vitro* raised plants of *Pyrenaria khasiana* in Woody Plant Medium with different plant growth regulators for multiple shoot induction. *In vitro* seedlings of *Pyrenaria khasiana* (65 numbers) were transferred to greenhouse for acclimatization. Qualitative phytochemical analysis of *Pyrenaria barringtonifolia* and *P. camelliflora* has been completed. Solvent extraction of *P. barringtonifolia* and *P. camelliflora*



Photo: ERC

***Tupistra nagarum* (Asparagaceae)**

using Soxhlet apparatus and Rotary Evaporator were done. Also *Argostemma rostratum* Wall. collected from Raid Nongbri Community forest for DNA barcoding.

For the project, "Diversity and phylogeny of aquatic fungi from North east India" by Dr. Ashish Venkatesh Prabhugaonkar, Scientist 'B' two field tours were conducted on 12.08.18 to Upper Shillong and from 18th to 20th August 2018 to Manas river, near Manas national park and Goraimari village and a total of 22 fungi were isolated. Fungi identified at least till genus are *Actinosporella megalospora*, *Acrogenospora megalospora*, *Alysidium* sp., *Beltraniella* sp., *Chalara* sp., *Codinaea* sp., *Helicoma* sp., *Helicomycetes* sp. (2 isolate), *Helminthosporium* sp., *Hypoxylon* sp., *Idriella rara*, *Nodulosporium* sp., *Pseudosubramaniomyces fusisaprophyticus*, *Stauriella indica*, *Sporotrichum* sp., *Wiesneriomyces laurinus*. Permanent slide mounts, herbariums and microphotographs were prepared for all these fungi. Two were obtained in pure culture. Received accession numbers from NFCCI at Agaharkar research institute, Pune for fungal cultures deposited. These are *Deejebhatia bambusae* Gen. et sp. nov. (NFCCI 4379), *Synnemaseimatoides raghukumarensis* sp. nov. (NFCCI 4380), *Parasynnemellisia khasiana* (NFCCI 4381) and from HCIO at IARI, New delhi. These are *Deejebhatia bambusae* Gen. et sp. nov. (HCIO 52178) and *Synnemaseimatoides raghukumarensis* sp. nov. (HCIO 52179)

Observed and recorded phenological data of flowering and fruiting of 91 plant species which are available in the garden by Dr. M. Murugesan and Sri L.R. Meitei, Bot. Asst.

### Public service rendered

Identified about 16 samples of specimens received from various institutions.

Dr. D.K. Roy surveyed the Raid Nongbri Community Forest (Near Nongpoh) on 31.08.2018 and identified 174 species growing at the site on request of Forest Dept. Meghalaya.

### Training/function/meeting attended/organised

A training program of PFMS and digital payments' by PAO (BSI/ZSI), Kolkata was organised on 1st & 2nd August 2018 and Staff of Cash Section and DDO of this Centre and other regional centres officials were trained.

Dr. S.K Singh attended a meeting organized by Bioresources Development Centre Shillong on 03.08.2018 at Office Chamber of Principal Secretary Planning, Govt. of Meghalaya.



Photo: ERC

**Training program on PFMS and digital payments' by AAO Kolkata at ERC, BSI, Shillong**





Photo: ERC

### Inauguration of GSDP training programme "Plant Tissue Culture Techniques and its application" at ERC, Shillong

Dr. Singh also attended a meeting of Governing Body of the Meghalaya State Medicinal Plants Board on 13.08.2018 in the office chamber of Chief Secretary to the Govt. Meghalaya.

Inaugural function for the certificate course on "Plant tissue culture techniques and its application" under Green Skill Development Programme was organized on 24.08.2018 at ERC, BSI, Shillong.

### Celebration of Independence Day 2018

Scientists and other officials of this office attended Independence day Celebration on 15.08.2018 at Eastern Regional Centre, Botanical Survey of India, Shillong.

### Visitors/students

Three delegates, Seven scientists, three professors, 16 research scholars, 64 students and one other visitor from various Institutions, Colleges and Universities visited the Centre.

### Publications

Singh, S.K. 2018. Description of six new species and two new infraspecific taxa of Lejeuneaceae (Marchantiophyta) from India. *Nelumbo* 60(1): 69–84.

Singh, S.K. 2018. Contributions to the Hepaticae and Anthocerotae of Mizoram IX. genus *Marchantia* L. *Indian For.* 144(5): 461–464.

Singh, S.K. and Kumar, S. 2018. Contribution to the liverwort and hornwort flora of Jharkhand. *Nelumbo* 60(1): 85–89.

Singh, S.K. and Singh, D. 2018. Discovery of a new taxonomic character in genus *Cyathodium* (Cyathodiaceae: Marchantiales) from India. *Geophytology* 48(1): 63–65.

Kumar, S., Singh, S.K. and Bondya, S.L. 2018. Additions of Four *Lejeunea* to the bryoflora of Nagaland, India. *Indian J. Forest.* 41(2): 171–178.

Odyuo, N., Roy, D.K. and Mao, A.A. 2018. *Tupistra nagarum* (Asparagaceae), a new species from Nagaland, North-eastern India. *Nelumbo* 60(1): 1–5.

Odyuo, N. and Roy, D.K. 2018. *Pyrenaria diospyricarpa* var. *camelliiflora* (Theaceae - Theoideae): an addition to the flora of India. *Nelumbo* 60(1): 6–9.

– Dr. S.K. Singh  
Scientist 'D' & HoO

## NORTHERN REGIONAL CENTRE, DEHRADUN

Identified five and described total 15 species of Angiosperm and Pteridophyte for the projects, Flora of Himachal Pradesh Vol. I, Flora of Sechu-Tuan Nala Wildlife Sanctuary, Chamba District, Himachal Pradesh, Flora of Binsar Wildlife Sanctuary, Floristic Diversity of Sukhna Lake Wildlife Sanctuary, Trees of Dehradun city, Revision of Genus *Adiantum* L. in India.

### Digitization of herbarium specimens

Scanned and digitized 115 specimens of the family Rubiaceae and of Pteridophytes.

### Programme organised

Organized Inaugural Function of GSDP –Tissue culture and its application course funded by EI division of MOEF & CC, New Delhi on 13.08.2018. Dr. Paramjit Singh, Director, Botanical Survey of India, Kolkata and Dr. A.A. Mao, Scientist 'F', Hqrs., BSI attended the function.



Photo: G.S. Panwar



Inauguration of GSDP training programme "Plant Tissue Culture Techniques and its application" at NRC, Dehradun

### Celebration of Independence Day 2018

Celebrated Independence day on 15.08.2018 by hoisting National Flag.

### Publications

Kumar, P., Singh, H. and Kumar, A. 2018. A Note on sustainable use of Himalayan Birch (*Betula utilis* D. Don) by local tribal community of Sechu-Tuan Nalla Wildlife Sanctuary, Chamba, Himachal Pradesh. *Indian For.* 144(7): 686–687.

Singhal, V.K., Singh, J., Singh, H., Kumar, P., Kholia, B.S. and Tewari, L.M. 2018. Chromosome count, meiotic abnormalities, pollen fertility and karyotype of *Elymus semicostatus* (Nees ex Steud.) Meld.

(Family: Poaceae) from North-West Himalaya, *Caryologia*, DOI: 10.1080/00087114.2018.1469816.

Kholia, B.S., Sharma, S., Kumar, B. and Rawat, V. 2018. Pteridological research in India (News). *Curr. Sci.* 115 (2): 200–201.

Kumar, R., Sharma, S. and Dwivedi, M.D. 2018. *Ceropegia mizoramensis* and *C. murlensis* (Asclepiadaceae)- Two new species from North-East India with Phylogenetic and Morphological evidence support. *Taiwania* 63(2): 163–170.

Kholia, B.S. and Sharma, S. 2018. *Asplenium phyllitidis* D. Don, a conservation priority fern of Uttarakhand. *Ind. J. Forestry* 41(2): 199–203.



Photo: G.S. Panwar

Independence day celebrated by all the BSI staff at NRC, BSI, Dehradun

**Dr. Kumar Ambrish**  
Scientist 'D' & HoO

## SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. K.A.A. Kabeer, Scientist 'D' and Sri A. Ravi Kiran, Bot. Asst. conducted botanical exploration from 06th to 14th August 2018 at Kodaikanal WLS, Tamil Nadu and vouched specimens of 90 field numbers. They also completed identification for specimens of 16 field numbers from the previous collection.

Dr. C. Murugan, Scientist 'D' and Dr. S. Arumugam, Bot. Asst. conducted botanical exploration from 16th to 23rd August 2018 at Meghamalai WLS, Tamil Nadu and vouched specimens of 142 field numbers and also completed identification for specimens of 50 field numbers from the previous collection.



Photo: SRC

A view of Evergreen forest at Aranmanikadu



Photo: SRC

Research team at Varaiaatumottia, Tamil Nadu



Collection of *Ceropogia* sp.



Photo: SRC

*Seidenfadeniella filiformis* (Orchidaceae)



*Strobilanthes kunthianus* (Acanthaceae)

### Herbarium Identification

Dr. J.H. Franklin Benjamin, Scientist 'C' and Sri Rakesh G. Vadhyar, Bot. Asst. identified specimens of 10 field numbers collected from Kanniyakumari WLS, Tamil Nadu.

Dr. R. Manikandan, Scientist 'D' and Ms. R. Mehala Devi, Sr. Pres. Asst. identified specimens of 28 field numbers collected from Cauvery North WLS, Tamil Nadu.

Dr. M. Palanisamy, Scientist 'D' and Dr. S.K. Yadav, Bot. Asst. identified specimens of 27 field numbers of seaweed collected from Goa coast and collected 10 references pertaining to the study area. In connection with documentation of Phytodiversity, Dr. C. Murugan and Dr. S. Arumugam identified specimens of 10 field numbers for Cyperaceae of Tamil Nadu.



*Crotalaria spectabilis* (Fabaceae)

Photo: SRC



*Liparis wightiana* (Orchidaceae)



*Schefflera wallichiana* (Araliaceae)

Photo: SRC



*Taeniophyllum alwisii* (Orchidaceae)

### Flora of Kerala

Sri Basil Paul, JPF completed descriptions for 9 taxa, belonging to the families Hydrophyllaceae and Boraginaceae. Sri P. Murugan, JPF completed descriptions for 11 taxa, belonging to the families Campanulaceae, Sphenocleaceae and Goodeniaceae. Ms. M. Uma Maheshwari, JPF completed descriptions for 32 Species belonging to the family Arecaceae

### Ex-situ conservation

Dr. S. Kaliamoorthy, Scientist 'D', Dr. M.Y. Kamble, Scientist 'D' and their team multiplied 186 plants belonging to 23 genera and recorded the phenological data of 32 plants, including 21 orchids and 11 other Angiosperms at National Orchidarium and Experimental garden (NO&EG), Yercaud.

### Lead Garden Project at NO&EG, Yercaud—Micro/vegetative propagation of Target plants

Micropropagation as well as vegetative propagations of five plants (*Vernonia shevaroyensis* Gamble; *Crotalaria shevaroyensis* Gamble; *Canarium strictum* Roxb.; *Coelogyne mossiae* Rolfe and *Coelogyne nervosa* A. Rich.) were carried out at NOEG, Yercayd. Besides, *Bentinckia condapanna* Berry ex Roxb seedlings were transplanted into field condition. They also successfully done artificial pollination in *Dendrobium nanum*, *Pinnalia polystachya*, *Eria pseudoclavicaulis* flowers using hand pollination techniques for fruit setting.

### Public service rendered

Identified 31 plant species for the students/research scholars of various institutions.

Dr. M. Palanisamy identified 149 seaweed taxa for the GEER Foundation, Gujarat.

Sri G.V. Rakesh and Dr. S. Arumugam, delivered a lecture on BSI and its activities to Botany students of Nirmala College for Women (68 students) on 09.08.2018 and to Bharathiyar University students (40 students) on 13.08.2018 as a part of their study tour to BSI, Coimbatore.

### Drawings made

Sri R. Suresh, Artist, illustrated 62 illustrations/charts/boards, whereas Sri A.T. Durgadas, Artist is involved in oil painting on Portrait of Dr. E.K. Janakiammal and Dr. W. Roxburgh for displaying at CNH auditorium.



**Inauguration of GSDP training program “Plant Tissue Culture Techniques and its application” at NO&EG, Yercaud**

### **Meetings/training/seminar attended**

Dr. C. Murugan and M. Segar, UDC attended Training/Workshop programme on PFMS application, EIS module, C-DDO e-payment, NTRP Module, Bhavishya module and Govt. Payment and accounting conducted by PAO (BSI & ZSI), Kolkata at Botanical Survey of India, Shillong on 1st & 2nd August 2018.

Drs. S. Kaliamoorthy & M.Y. Kamble attended Town Official Language Implementation Committee meeting, at office of Divisional Railway Manager, Salem Junction, Salem on 07.08.2018.

### **Visitors/students**

During this month, 13 scientific personnel/officials/students/scholars visited the museum, herbarium and library of this regional centre whereas 209 persons in 19 parties visited the NO&EG, Yercaud.

**– Dr. C. Murugan**  
Scientist ‘D’ & HoO

## **WESTERN REGIONAL CENTRE, PUNE**

Dr. Priyanka Ingle, Scientist ‘B’ and Ms. Madhuri Pawar, Sr. Pres. Asst. conducted one field exploration tour to Wan Wildlife Sanctuary, Maharashtra from 15th to 31st August 2018.

Sri S.C. Patil, Bot. Asst. conducted one field exploration tour to Pushpagiri Wildlife Sanctuary, Karnataka during 15th to 31st August 2018.

Dr. S. Bhakta, Bot. Asst. conducted a tour to pre-Antarctica Snow/Ice acclimatization training held at Mountaineering & Skiing Institute, ITBPF, Auli (Uttarakhand) from 9th August to 3rd September 2018 in connection with 38th Indian Scientific Expedition to Antarctica (38th ISEA).

### **Identification of Herbarium specimens**

Dr. C.R. Jadhav, Botanist identified specimens of 20 field numbers for the project, “Floristic survey of Someshwara Wildlife Sanctuary, Karnataka.

Dr. Priyanka Ingle identified specimens of nine field numbers for the project, “Floristic diversity of Wan Wildlife Sanctuary, Maharashtra”.

Sri S.C. Patil, Bot. Asst. identified specimens of 44 field numbers for the project, “Flora of Pushpagiri Wildlife Sanctuary, Karnataka”.

Ms. A.M. Neelima conducted Light microscopic studies of two orchid species for the project, “Seed morphology and cyto-taxonomy of some selected orchids of Northern Western Ghats”.

Sri D. Jesubalan, Bot. Asst. identified specimens of three field numbers for the project, “Pteridophytic flora of Pushpagiri Wildlife Sanctuary, Karnataka with 10% periphery”.

Dr. Rashmi Dubey, Scientist ‘D’ identified specimens of 12 field numbers for the project, “Taxonomic Studies of Micro fungi of Sanjay Gandhi National Park along with its 10% peripheral area”.

### Public service rendered

During this month 10 plant specimens identified and issued authentication certificates to students from B. Pharm, M. Pharm. colleges, Ph.D. and P.G. students from different institutions.

### Meetings attended

Dr. P. Lakshminarasimhan, Scientist 'E' & HoO, has attended the second meeting of Plant Expert Committee held at Vanbhavan, Pune on issues pertaining to Plant Conservation in Maharashtra and problems faced by researchers during plant collection in Maharashtra on 13.08.2018.

Dr. A. Benniamin, Scientist 'D' has attended State Biodiversity Meeting held on 14.08.2018 at the office of Maharashtra State Biodiversity Board at Pune.

### Visitors/students

A total of 23 students and two faculty members from Jai Hind College, Mumbai visited WRC during this month.

Sri N. Vasudevan, APCCF, Mangrove-Cell, Dr. A.K. Jha, Former PCCF & DG, Social Forestry Division, Dr. Mahesh Shindikar, Asst. Prof., COEP, Pune visited WRC Pune during the inauguration of GSDP Mangrove Course.

### Publications

Benniamin, A. Tripathi, D., Sundari, M.S., Jesubalan, D and Singh, B. 2018. *Thelypteris arbuscula* (Willd.) K. Iwats. - a new record to the fern flora of Karnataka, India, *NeBio* Vol. 9(1): 188–190.

Singh, B., Jesubalan, D. and Sundari, M.S. 2018. Tissue Culture, Histochemical, Phytochemical analysis and Anti-cancer activity study on a Traditional Medicinal Plant - *Spharenthus indicus* L. *Int. J. Curr. Biotech.* 6(7): 1–7.



Inauguration of GSDP training programme "Community based conservation of mangroves" at WRC, BSI, Pune



Lecture by experts on mangrove identification (left) and on mangrove nursery technique (right) to GSDP trainees under “Community based conservation of mangroves” at WRC, BSI, Pune



Visit to mangrove nursery (left) and field visit to mangrove habitat (right) of GSDP trainees under “Community based conservation of mangroves” at WRC, BSI, Pune



Trainees on livelihood training (left) and learning to measure the pH of water (right) under “Community based conservation of mangroves” at WRC, BSI, Pune

### Green Skill Development Programme (GSDP)

The training course, “Community based Conservation of Mangrove Ecosystem” under the Green Skill Development Programme (GSDP) of Ministry of Environment, Forest and Climate Change, New Delhi was commenced on 06.08.2018. The inauguration programme was attended by Sri N. Vasudevan, APCCF, Mangrove Cell, Maharashtra, Dr. A.K. Jha, Former PCCF & DG, Social Forestry Division, Maharashtra Forest Department and Dr. Mahesh Shindikar, Assistant Professor, COEP, Pune and Mangrove expert, Mangrove Foundation, Mumbai. A total of 10 students were enrolled for this training course. A total of 12 lectures were arranged with experts and resource persons from 7th to 21st August 2018. Field orientation training was organized from 23rd August to 5th September 2018 to different coastal districts such as Sindhudurg, Ratnagiri and Raigad under the supervision of Mangrove-Cell, Mumbai.

– Dr. P. Lakshminarasimhan  
Scientist ‘E’ & HoO



Visit of Dr. Harsh Vardhan, Hon'ble Minister, MoEF & CC, New Delhi to BSI & ZSI, Hyderabad

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