

# BSI NEWSLETTER

The monthly electronic newsletter of Botanical Survey of India

July 2018

Volume 5

Number 7



**Botanical Survey of India**  
CGO Complex, 3<sup>rd</sup> MSO Building, Block – F  
5th Floor, DF Block, Sector – I, Salt Lake City  
Kolkata – 700 064



## HEAD QUARTERS, KOLKATA

In connection with the ongoing projects such as “Studies on wild mushrooms of Sikkim”, “Wood rotting fungi of Rajmahal hills”, “Hot spring Algae of Rajgir and Mungar, Bihar”, “Revision of the family Metzgeriaceae in India”, “Liverworts and Hornworts Flora of Darjeeling District, West Bengal” identification, drawings, microphotographs, photoplates and descriptions were made by the scientific officials of Cryptogamic section. Dr. M.E. Hembrom, Botanist prepared ArcGIS map for the species *Ganoderma mediosinense* J.D. Zhao (Ganodermataceae).

Dr. Kanad Das, Scientist ‘D’ prepared the final report for “Eastern Regional Workshop on Conservation and Management of Wetlands” held on 6th and 7th July in Botanical Survey of India and submitted to the Director, Botanical Survey of India.

### Public service rendered

Dr. R.K. Gupta, Scientist ‘D’ attended a group of students from Lysee school, Kolkata and explained about Pteridophytes and Algae.

Dr. Devendra Singh, Scientist ‘D’ reviewed manuscripts one each for *Plant Science Today* and *Nelumbo*.

Dr. M.E. Hembrom conducted Theoretical and practical classes as a resource person at Lalgarh Government College, Medinipore, West Bengal on a National Seminar “Nature & Environment” on 26.07.2018 and 27.07.2018.

Sri D.K. Sah, Artist conducted Theoretical and practical classes as a resource person at training programme for Botanical Assistants at CNH and delivered a lecture on ‘Botanical illustration – an overview’.

Dr. A.B.D. Selvam, Scientist ‘D’ pharmacognostically studied and authenticated three crude drug samples (as detailed below), which were received from Department of Environmental Sciences and Engineering, IIT (ISM), Dhanbad, Jharkhand. *Nigella sativa* L. (Ranunculaceae) - Seeds; *Syzygium aromaticum* (L.) Merr. & L.M. Perry (Myrtaceae) - Flower buds and *Curcuma longa* L. (Zingiberaceae) - Rhizome.

Dr. Selvam evaluated a Ph.D. thesis, “Characterization and macropatterns of Calcium oxalate crystals (Calciphytoliths) in selected Medicinal plants” received from the University of Madras, Chennai.

### Van Mahotsav 2018

The Van Mahotsav celebration at AJC Bose Indian Botanical Garden was attended by the Scientific officials of BSI units at Howrah and Kolkata.

### Training conducted

Two weeks training programme for Botanical Assistants were conducted from 22nd June to 5th July 2018 at Central National Herbarium, Botanical Survey of India, Howrah and the training was attended by Sri Arvind Parihar, Bot. Asst., Cryptogamic unit.



Photo: P.K. Deoraliya

Botanical Assistants Training at CNH, Howrah

### Publications

Paloi, S., Das, K. and Acharya, K. 2018. *Russula darjeelingensis*, a new species from Eastern Himalaya, India. *Phytotaxa* 358(1): 83–90.

Selvam, A.B.D. 2018. Presence or absence of stone cells in the roots of Indian Aconites: An aid to identification of species. *Asian J. Pharmaceut. Res. Devel.* 6(3): 42–45.

Wang, X., Das, K., Horman, J., Antonin, V., Baghela, A., Chakraborty, D., Hembrom, M.E., Nakasone, K., Ortiz-Santana, B., Vizzini, A., Hofstetter, V. and Buyck, B. 2018. Fungal Biodiversity Profile 51–56. *Cryptogamie Mycologie* 39(2): 211–257.

## CENTRAL NATIONAL HERBARIUM, HOWRAH

Dr. Vinay Ranjan, Scientist 'D' and Sri Anant Kumar, Bot. Asst. identified specimens of 15 field numbers and 17 species collected from Neora Valley National Park, Darjeeling district, West Bengal.

Sri P.P. Ghoshal, Botanist identified 14 species collected from of Betla National park, Latehar, Jharkhand.

Sri Anand Kumar, Botanist identified 10 species collected from Udaipur Wildlife Sanctuary, West Champaran, Bihar.

### Public service rendered

Provided literature to Prof. Vatsavaya S. Raju (Retd.), Department of Botany, Kakatiya University, Warangal, Telangana scanned copy of the paper, "K. M. Sebastine & A. N. Henry 1966. A contribution to the Flora of Pakhal and Surrounding Regions in Narasampet Taluk, Warangal District, Andhra Pradesh. Bulletin of Botanical Survey of India 8 (3-4): 304-311".

Supplied one image of Roxburgh's Icones of the plant *Capparis acuminata* Roxb. to Mrs. Monica Ray, Botanical Artist, New York as requested.

Supplied the herbarium image of *Eriocaulon margaretae* (Sedgwick 2979) as requested by Dr. Ritesh Kumar Chowdhary, Scientist, Agharkar Research Institute, Pune.

Provided four high resolution images of *Crotalaria* species viz., *Crotalaria alata*, *C. pallida*, *C. sessiliflora* and *C. verrucosa* to Dr. A.A. Ansari, former Scientist, BSI for use in his publication of the genus *Crotalaria* in India.

### Lecture delivered

Scientists of CNH delivered lectures during two weeks training programme for Botanical Assistants at Central National Herbarium, BSI, Howrah organized by Central National Herbarium from 22nd June to 5th July 2018.

### Visitors/students

Sri A.T. Durgadas from SRC, BSI visited on 02.07.2018.

Botanical Assistant Trainees from different circles of BSI visited to Type-II on 02.07.2018.

Ms. Manju Pandey, Joint Secretary, MoEF & CC, New Delhi on 06.07.2018; Scientists of BSI visited East Kolkata Wetland along with Ms. Manju Pandey on 07.07.2018.

18 students of B.Sc. (Botany General) from Dinobandhu Mahavidyalaya, Bangaon, North 24 Parganas for visiting General Herbarium on 24.07.2018 on educational tour. Deshmukh Pradip Vikram, Shivaji University, Kolhapur.

### Publication

Turner, I.M. and Sampath Kumar, V. 2018. Flora of Singapore precursors, 4. A summary of scandent *Psychotria* (Rubiaceae) in Singapore and Peninsular Malaysia. *Phytotaxa* 361(2): 183–197. [Published online 19th July 2018]. <https://doi.org/10.11646/phytotaxa.361.2.4>



**Ms. Manju Pandey, Joint Secretary, MoEF & CC, New Delhi along with scientists of BSI at East Kolkata Wetland**

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

## INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

The botanical paintings by Roxburgh are being interpreted with updated nomenclature. Under this project, following 12 species were described viz., *Vossia cuspidata* (Roxb.) Griff.; *Coix aquaticus* Roxb.; *Arthraxon lanceolatus* (Roxb.) Hochst; *Sorghum miliaceum* (Roxb.) Snowden; *Andropogon pumilus* Roxb.; *Lophopogon tridentatus* (Roxb.) Hack; *Chrysopogon verticillatus* (Roxb.) Trin. ex Steud.; *Pseudanthistiria heteroclita* (Roxb.) Hook. f.; *Bambusa balcooa* Roxb.; *Bambusa tulda* Roxb; *Themeda arundinacea* (Roxb.) A. Camus and *Melocanna baccifera* (Roxb.) Kurz.

### Database of Herbarium Specimens

As a part of preparing a database of herbarium specimens at BSIS, 175 numbers of Dicot herbarium specimens were listed and documented.

### Public service rendered

Under the Narcotic Drugs & Psychotropic Substances (NDPS) Act, two samples received from different police stations of West Bengal and were identified.

### Awareness programme/workshop/symposium organized/attended

A group of 41 students from Sarvodaya Balika Vidyapith, Dum Dum visited 'Botanical Gallery' and 'Gallery on Botanical History' and attended a talk on 'Preservation of art objects on paper using aroma of natural plants and plant products against biological organism' delivered by Dr. Anindita saha on 07.07.2018 under Environmental Education Awareness Programme (EEAP).



Photo: ISIM



Students of Sarvodaya Balika Vidyapith, Dum Dum at Industrial Section Indian Museum, BSI, Kolkata

Dr. M. Bhaumik, Scientist 'D' & HoO, Dr. A.K. Sahoo, Scientist 'D' and Sri B.C. Dey, Bot. Asst. attended the workshop on 'Eastern Region Workshop on Conservation and Management of Wetlands' held at CNH auditorium, Howrah on 06.07.2018.

A symposium on 'Megha Utsava' organized by Indian Museum on 13.07.2018 was attended by Dr. M. Bhaumik and Dr. A.K. Sahoo. A lecture on "A glimpse on seasonal useful flowering plant of Himalayan regions of India in monsoon" delivered by Dr. A.K. Sahoo during the symposium.



Photo: ISIM

Dr. Anandi Subramanian along with ZSI and BSI officials visiting ISIM Gallery at ISIM, BSI, Kolkata

### Visitors

Dr. Anandi Subramanian, Sr. Economic Advisor, MoEF & CC, New Delhi and Sri Kumar Rajnish, National Programme Coordinator, ENVIS Secretariat, New Delhi visited Botanical Gallery followed by a discussion on GSDP implementation activities with officials of BSI & ZSI on 23.07.2018.

– Dr. Manas Bhaumik  
Scientist 'D' & HoO

## ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

**Herbarium sheets Scanned:** Total 577 specimens (539 specimens of family Cyperaceae and 38 specimens of family Poaceae).

**Herbarium details computerized in EXCEL format:** Total 94 herbarium specimens (56 specimens of family Pandanaceae and 38 specimens of family Poaceae) were fed in the computer in a prescribed format.

### Meeting/training attended

Dr. C.P. Vivek Bot. Asst. participated two weeks training programme for Botanical Assistants from 22nd June to 5th July 2018 at Central National Herbarium, Howrah organized by Botanical Survey of India, Kolkata.

Dr. Sanjay Mishra, Scientist 'B' attended 79th Half yearly meeting of Town official language implementation committee (TOLIC) on 13.07.2018 held at ICAR- Central Island Agriculture Research Institute, Port Blair.

Dr. Lal Ji Singh, Scientist 'D' & HoO attended Ph.D. thesis viva voce (public) presentation on "*Colonization and Biochemical Composition of Crustose Coralline Algae and its Role in the Interaction of Scleractians Corals along the Port Blair Coast, India*" at Pondicherry University, Brookshabad Campus, Port Blair on 06.07.2018.

Dr. Singh attended meeting of the joint review Coastal Security under the Chairmanship of Chief Secretary, Andaman and Nicobar Administration at Secretariat, Port Blair on 16.07.2018.

Dr. Singh participated research advisory committee meeting at Office of the Principal Chief Conservator of Forests, Research & Working Plan, Haddo, Port Blair on 25.07. 2018.

Dr. Singh attended meeting of the carrying capacity of identified Ecotourism sites in Andaman and Nicobar Islands at Vanya Prani Bhawan, Office of the Principal Chief Conservator of Forests (Wild Life) Chatham on 27.07.2018.

Dr. Singh participated closing ceremony of 69th Van Mahotsav 2018 organized by Department of Environment and Forests, Andaman and Nicobar Administration at Tagore Government College of Education, Port Blair on 31.07.2018.

### Public Service Rendered

Dr. Mishra chaired the meeting for the evaluation of best performing offices under NARACAS, Port Blair in Rajbhasha implementation held at ICAR - Central Island Agriculture Research Institute, Port Blair on 09.07.2018.

Dr. Singh organised the mass tree planting programme on the occasion of Van Mahotsav at the campus of the Government Primary School, Nayashahar, South Andaman on 25.07.2018.

### Van Mahatsav 2018

As a part of month long celebration of 69th Van Mahotsav and awareness, a tree planting programme was organized by the Botanical Survey of India, Andaman and Nicobar Regional Centre, Port Blair at Government Primary School, Nayasahar on 25.07.2018 to create awareness among the students and general public of these islands about the importance of trees and life.



*Musa indandamanensis* L.J. Singh bloomed at Office Garden, ANRC, BSI, Port Blair



**Celebration of 69th Van Mahotsav 2018 at Government Primary School, Nayasahar, South Andaman organized by Andaman & Nicobar Regional Centre, BSI on 25.07.2018**

The function began with a tree planting by Dr. Lal Ji Singh, Scientist 'D' & HoO. Dr. Singh urged the school children and local people create more awareness about multiplication and conservation of tree species. The awareness program was enthusiastically participated by a large number of school students, teachers, staff, officers and staff of BSI and planted several rare, endangered, endemic and economically important species. Earlier, Smt. Annama Thomas, Head mistress, Government Primary School, Nayasahar welcomed the gathering and Dr. Sanjay Mishra, Scientist 'B' proposed the vote of thanks.



**Photo: G.A. Ekka**

**Dr. Gadi Padmavati, Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair at Herbarium of ANRC, BSI, port Blair on 05.07.2018**



**Photo: S. Banik**

**Dr. Harpal Singh Dagar, Retired Principal, Haryana Education Department and ex BSI, SRF at Herbarium of ANRC, BSI, Port Blair on 28.07.2018**

### Visitors

Dr. Gadi Padmavati, Department of Ocean Studies and Marine Biology, Pondicherry University, Port Blair visited office on 05.07.2018.

Dr. V. Bhaskaran, Principal Scientist, ICAR, CIARI, Port Blair visited Herbarium and Library for consultation on 20.07.2018.

Ms. Sangeeta Rani Das and Ms. Rajeshwari, M.Sc. Students, JNRM, Port Blair visited library for consultation on 26.07.2018.

Sri S. Arvind, Ms. K. Nasreen and Ms. Pavitra, M.Sc. student JNRM, Port Blair visited garden on 27.07.2018.

Dr. Harpal Singh Dagar, Retired Principal, Haryana Education Department and ex BSI, SRF visited office and garden on 28.07.2018 and 30.07.2018 respectively.

Mrs. Heena Hayat, Navy, Andaman and Nicobar Command, Port Blair visited office on 30.07.2018.

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

## ARID ZONE REGIONAL CENTRE, JODHPUR

Specimens of 124 field numbers have been identified during the period under report.

### Public service rendered

Identified one plant specimen *Kalanchoe pinnata* (L.) Pers. brought by Sri Amit Kumar Jangir, M. Pharm. Student, Jaipur college of Pharmacy, Jaipur on 10.07.2018.

### Training/meeting attended

Sri Ravi Prasad, Dr. P. Hari Krishna and Sri Ramesh Kumar, Bot. Assts. participated and successfully completed two weeks training programme for Botanical Assistants organised by BSI as prescribed in Recruitment rules of Botanists from 22nd June to 5th July, 2018 at Central National Herbarium, Howrah.

Sri Vinod Maina, Scientist 'D' & HoO participated as Chief guest during inaugural session of Green Skill Development program jointly organised by BSI & ZSI on 02.07.2018 at ZSI, Jodhpur.

Sri Vinod Maina acted as a expert member of the interview board to select 20 candidates for "Training on management of small Botanic garden" under Green Skill Development program in Arid Forest Research Institute, Jodhpur on 28.07.2018.

All Officers and staff members of this office participated in demo for operating fire fighting system installed in Library building of this office on 31.07.2018.

Organized Town official language implementation committee meeting at AZRC, BSI, Jodhpur on 23.07.2018.

– Sri Vinod Maina  
Scientist 'D' & HoO

Photo: P. Hari Krishna



Flowering of *Hyphaene dichotoma* in Desert Botanic Garden, AZRC, BSI, Jodhpur (Inset: Flower)



Photo: Ravi Prasad

Flowering of *Zephyranthes* Lily in Desert Botanic Garden, AZRC, BSI, Jodhpur

## CENTRAL REGIONAL CENTRE, ALLAHABAD

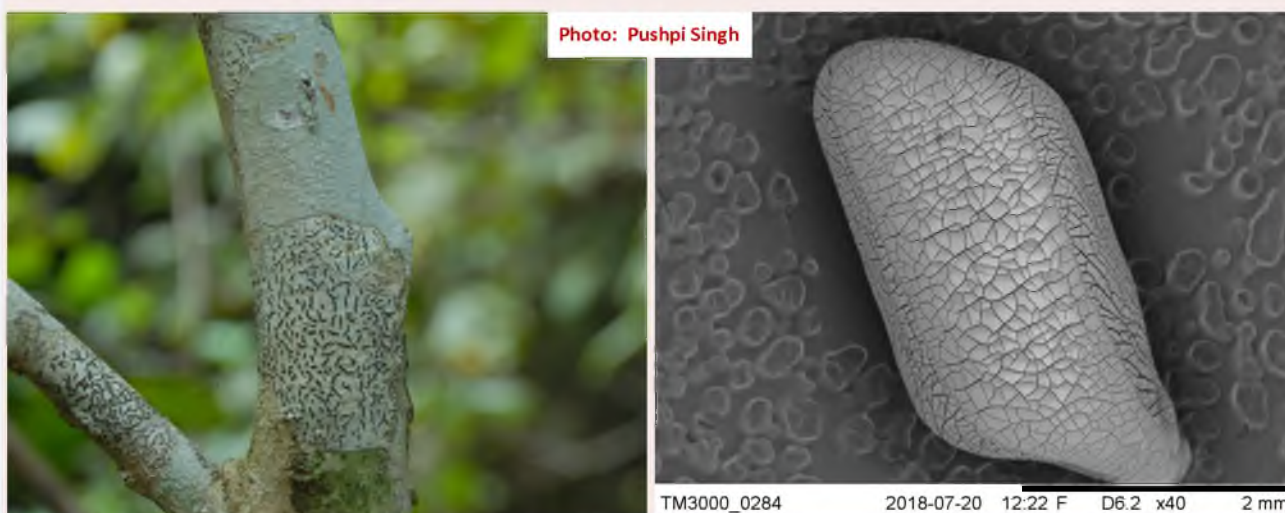
For the project, 'Studies of fossil and living plants with reference to the impact of climate change on flora of Gangetic Plains and Central India', Dr. Arti Garg and Dr. Ashutosh Verma conducted tour to the Birbal Sahni Institute of Palaeobotany, and National Botanical research Institute, Lucknow and prepared a list of 232 megafossils of India pertaining to the year 2006 to 2018.

For the project, 'Cytotaxonomical studies of selected taxa of Indian subtribe *Cassiinae*' Dr. Ashutosh Verma completed meiotic studies in *Chamaecrista mimosoides* (L.) Greene and pollen fertility, pollen germination percentage and total nuclear volume of five species of *Senna*.

A total of 42 specimens were identified in connection with the project 'Identification of old unidentified specimens of BSA'.

Nine lichen specimens of various Indian Herbaria were authenticated by Dr. Pushpi Singh, N-PDF.

During major reorganization of the Herbarium (BSA) 285 specimens were accessioned and 1695 were incorporated.



**Graphidoid Lichens on a twig in Panchgani forest, Maharashtra: *Diorygma aeolum* (upper part) and *Graphis duplicata* (lower part) [left]. Scanning Electron Microscopic view of a seed of *Senna tora* (Fabaceae) [right]**

### Public service rendered

Dr. G.P. Sinha and Dr. A.N. Shukla helped a medicinal plant grower (Mr. Anisuddin, Ramchaura station, Allahabad) who came for verification of two live medicinal plants, *Bacopa monnieri* (L.) Wettst. and *Cayratia trifolia* (L.) Domin and was also provided brief information on medicinal plants being grown in the associated garden of CRC, BSI, Allahabad.

Dr. Arti Garg reviewed a Ph.D. thesis entitled, 'Floristic Diversity of Valmiki Tiger Reserve, West Champaran District, Bihar' and submitted comments to Nehru Gram Bharti University, Allahabad. Dr. Garg also reviewed a manuscript for the Journal *Taiwania*.

Dr. A.N. Shukla reviewed a manuscript for *Tropical Plant Research*.

### Training/conference attended/lectures delivered

Dr. Sheo Kumar presented a paper, 'Plants of healing ailments conserved in Botanic Garden of Indian Republic', on 19.07. 2018 in National Conference on Ancient India Knowledge: Science and Technology, July 17th -19th, 2018 at NCERT, New Delhi.

Sri Vineet Singh and Dr. Nitisha Srivastava attended a two week in-service training programme for Botanical Assistants from 22nd June to 5th July 2018 at Central National Herbarium, Howrah.

### Publication

Srivastava, N. 2018. Nanotechnology for Agricultural Improvement. In. *New Approaches in Agricultural, Environmental and Nutritional Technology*, vol. 2, pp. 195–199.

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



## EASTERN REGIONAL CENTRE, SHILLONG

During this period one field tour was conducted by Dr. M. Murugesan, Scientist 'B' to Senapati and Kangpokpi districts of Manipur during 20th to 26th July 2018 for collection of live RET plants to conserve *ex-situ* in Experimental Botanical Garden, Umiam, Barapani.

Dr S.K. Singh, Scientist 'D' identified nine samples of *Riccia* belonging to seven species from Kerala sent by Sri M.C. Nair and also identified seven samples of Liverworts (including two *Riccia*) got on loan from SRC, BSI, Coimbatore for the project "Taxonomic Revision of Genus *Riccia* (Marchantiophyta) in India".

During this period, under other projects 12 species identified, 21 Specimen listed and 10 species described (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, Flora of Eastern Nagaland by Dr. N. Odyuo, Scientist 'D' & Dr. R. Daimary, Bot. Asst. and Flora of Nagaland (Vol. I & 2) by Dr. A.A. Mao, Scientist 'F', Dr. N. Odyuo, Scientist 'D', and Dr. D.K. Roy, Bot. Asst.

For DNA barcoding and phylogenetic analysis of 20 selected species from Northeast India and phytochemical screening of 11 medicinal plants by Dr. Deepu Vijayan, Scientist 'C' extracted genomic DNA from *Cymbidium elegans*, *Denfrasiium* sp., *Pyrenaria chirapunjeana*, *Oxyspora vagans*, *Medinilla erythrophylla*, *Pyrenaria khasiana* var. *lakhimpurensis*, *Habenaria* sp., *Platanthera* sp. and the extracted DNA was quantified on 0.8% agarose gel and documented.

Subcultured *in vitro* raised plants of *Pyrenaria khasiana* in Woody Plant Medium with different plant growth regulators for multiple shoot induction. Involved in the demonstration of High Performance Liquid Chromatography (UHPLC) by the Application Specialist from Thermofisher Scientific and standardized C18 column and fraction collector.

For Diversity and phylogeny of aquatic fungi from Northeast India By Dr. Ashish Venkatesh Prabhugaonkar, Scientist 'B' isolated *Berkleasium* sp., *Candelabrum* sp. (in culture), *Fusarium sambucinum*, *Gyothrix* sp., *Moniliophthora* sp., *Speiopsis pedatospora*, *Thozetella* sp. and an unidentified sclerititious fungus (In culture) from the litter collected by Dr. M. Murugesan from Manipur. Also send three cultures of anamorphic Ascomycetes with respective culture data sheets for deposit and accession to NFCCI at Agaharkar Research Institute, Pune. These are *Deejebhatia bambusae* Gen. et sp. nov., *Synnemaseimatooides raghukumarensis* sp. nov., *Parasynnemellisia khasiana*.

Observed and recorded phenological data of flowering and fruiting of 69 plant species which are conserved in the garden by Dr. M. Murugesan and Sri L.R. Meitei, Bot. Asst.

### Public service rendered

Identified one specimen received from Dibrugarh University, Assam.

### Training/function attended

Dr. Dilip Kr. Roy, Dr. Ranjit Doimary, Dr. Satya Ranjan Talukdar, Laishram Ricky Meitei and L. Ibemhal Chanu, Bot. Asst. attended two weeks in-service training programme of Botanical Assistants from 22nd June to 5th July 2018 at Central National Herbarium, BSI, Howrah.

Dr. A.A. Mao, Dr. N. Odyuo and Dr. M. Murugesan participated in Inauguration of Institute of Bioresources & Sustainable Development (ISBD) Meghalaya on 28.07.2018.

### Visitors/students

Seven scientists, one teacher, one research scholar and eight students from various Institutions, Colleges and Universities visited the Centre.

### Publication

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.

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

## NORTHERN REGIONAL CENTRE, DEHRADUN

Identified five and described total 11 species of Angiosperm and Pteridophyte in connection with the projects, Flora of Himachal Pradesh Vol. I, Flora of Sechu-Tuan Nala Wildlife Sanctuary, Chamba District, Himachal Pradesh, Revision of Genus *Adiantum* L. in India.

### Digitization of Herbarium specimens

Scanned and digitized 104 specimens of the family Rubiaceae and of Pteridophytes.

### Function/meetings/workshops/training attended/organized

Dr. Kumar Ambrish, Scientist 'D' & HoO organized a workshop/awareness campaign on 04.07.2018 in Sanghar village, GHNP, Kullu under the NMHS(MG) project.

Dr. Kumar Ambrish prepared six Feasibility Reports of ABG proposals for considering in ABG Expert Committee meeting on 16.07.2018. Dr. Ambrish also attended ABG Expert Committee meeting on 16.07.2018 to discuss and provide the Feasibility Report of the Project proposals in NRC jurisdiction in MOEF & CC, New Delhi.

Dr. Kumar Ambrish attended NBT-66 Expert Committee meeting on 17.07.2018 to discuss and provide the information on RET plants etc. at NRC jurisdiction in MOEF & CC, New Delhi.



Photo: Rajnikant

**Inauguration of Exhibition during Workshop/ Awareness campaign by Sri Ajit Thakur, Conservator of Forest of Great Himalayan National Park (GHNP), Kullu**

**Students of GSSS Shangarh participating in Awareness Rally during the workshop/Awareness campaign on 4th July, 2018 organized under NMHS (MG) Project**

Dr. Ambrish also attended 2nd Steering Committee meeting on R & D scheme to consider R&D projects of XIth and XIIth five-year Plan on 18.07.2018 as one of the subject Experts in MOEF & CC, New Delhi.

Dr. Prashant Pushalkar, Scientist 'D' attended meeting of Uttarakhand State Biodiversity Board on 10.07.2018 and as a member of 'Committee on Threatened Plants' assisted board in preparation of list and prioritizing species for enlisting in section 38 for conservation initiation.

Dr. Pushalkar as a member of Uttarakhand Biodiversity Board committee on Research Project Approval attended to checking and approval of two biodiversity project proposals on 'Dehradun Basmati' and 'Status Assessment and Habitat study of Pangolin in Uttarakhand' submitted by Wildlife Institute of India to Uttarakhand State Biodiversity Board.

Dr. Brijesh Kumar, Dr. Bhavana Joshi, Sri Sachin Sharma and Sri Purushottam Kumar Deoraliya attended two weeks training programme of Botanical Assistant from 22nd June to 5th July 2018 at CNH, Howrah.

### Visitors

36 SFS Officer trainees of Central Academy of State Forest Service (CASFOS), Dehradun Uttarakhand belonging to Maharashtra, Gujarat, Karnataka, Chattishgarh and Odisha cadres on 27.06.2018.

### Publication

Ambrish, K. and Rajnikant. 2018. *Juncus effuses* L. (Juncaceae) - A new record for Uttarakhand. *Indian For.* 144(6): 586–587.

Kumar, P., Singh, H. and Singhal, V.K. 2018. A synopsis of cytology and cytogeography of Tribe Epilobaeae Endl. (Onograceae). *Cytologia* 83(2): 175–180.

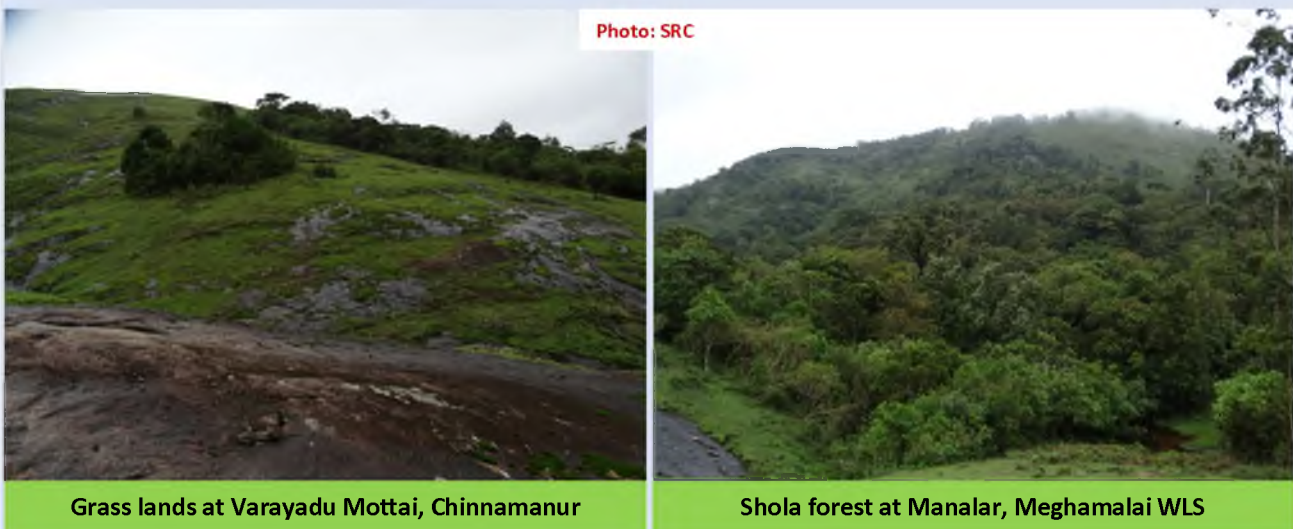
Khan N.A., Singhal, V.K., Kumar, P. and Gupta, R.C. 2018. Male meiotic and morphometric analysis in the 2x and 4x cytotypes in *Arabis recta* Vill. (Brassicaceae) from cold desert regions of North-West Himalayas. *Cytologia* 83(2): 207–210.

Fraser-Jenkins, C.R., Gandhi, K.N. and Kholia, B.S. 2018. *An annotated Checklist of Indian Pteridophytes*. Part -2. Bisen Singh Mahendra Pal Singh, Dehradun.

– Dr. Kumar Ambrish  
Scientist 'D' & HoO

## SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. S. Arumugam, Bot. Asst. conducted two-day botanical exploration from 16th to 17th July 2018 to Megamalai Wildlife Sanctuary for the collection of RET trees. Dr. Arumugam also consulted herbarium at the Madura College, Maduraim, Tamil Nadu during 18th and 19th July 2018.



Grass lands at Varayadu Mottai, Chinnamanur

Shola forest at Manalar, Meghamalai WLS

### Identification of herbarium specimens

Dr. K.A.A. Kabeer, Scientist 'D' and Sri A. Ravi Kiran, Bot. Asst. completed identification for 15 field numbers from Kodaikanal WLS, Tamil Nadu. Dr. J.H. Franklin Benjamin, Scientist 'C' and Sri Rakesh G. Vadhyar, Bot. Asst. completed identification for 30 field numbers from Kanniyakumari WLS, Tamil Nadu. Dr. C. Murugan, Scientist 'D' and Dr. S. Arumugam completed identification of 50 field numbers from Meghamalai WLS, Tamil Nadu. Dr. R. Manikandan, Scientist 'D' and Ms. R. Mehala Devi, Sr. Pres. Asst. completed identification of 28 field numbers from Cauvery North WLS, Tamil Nadu. Dr. M. Palanisamy, Scientist 'D' and Dr. S.K. Yadav, Bot. Asst. completed identification for 25 field numbers of seaweed specimens 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, completed identification for 10 field numbers for Cyperaceae of Tamil Nadu.

### Ex-situ conservation

Dr. S. Kaliamoorthy, Scientist 'D' and Dr. M.Y. Kamble, Scientist 'D' and his team collected and introduced 106 seeds belonging to six taxa, multiplied 42 samples belonging to 11 taxa, developed six seedlings of two taxa, 27 cuttings of three taxa and recorded the phenological data of 33 plants, including 22 orchids and 11 other angiosperms at National Orchidarium and Experimental Garden (NO & EG), Yercaud.

### Scanning Electron Microscopy (SEM)

Ms. R. Mehala Devi and Ms. M. Ananthalakshmi, Sr. Pres. Assts., completed descriptions of 10 taxa of *Fimbristylis* based on SEM study. Dr. S. Kaliamoorthy and Dr. T. S. Saravanan collected pollinia of seven species of orchids and fixed in FAA for SEM study.

### Public service rendered

Identified 28 plant species for the students/research scholars of various institutions.

Twenty digital images of Fagaceae were sent to Shankhamala Mitra, SPF, CNH, Howrah.

Twenty digital images of *Eriolaena* sp. were sent to Dr. L. Rasingam, DRC, Hyderabad.

Three digital images of *Elatostema lineolatum* var. *setosum* Henry (Isotype) were sent to Dr. P. Sunoj Kumar, Assistant Professor, University of Calicut, Kerala.

Ten digital images of *Argyreia* were sent to Dr. P.V. Prasanna, Scientist 'F' & HoO, CNH, Howrah.

Dr. M.Y. Kamble and Dr. T.S. Saravanan explained the garden activities and conservation methods to 85 students and faculties from The Indian Public School (TIPS), Erode on 10.07.2018.

Dr. M. Palanisamy identified 149 taxa of seaweeds (containing 162 herbarium sheets) for GEER Foundation, Gujarat.

### Meetings/conference/programme/training attended

Dr. C. Murugan attended review meeting on Assistance to Botanic Garden on 16.07.2018 at MoEF & CC, New Delhi.

Seven Botanical Assistants of this centre attended Two weeks In-Service Training Program for Botanical Assistants of BSI, approved by the MoEF & CC, held at CNH, Howrah during 22nd June to 5th July 2018.

Sri A.T. Durdadas, Artist Gr. II presented a Power Point Presentation on the subject: History of Botanical Art" held at Central National herbarium, Howrah as the part of Training Program for Botanical Assistants on 02.07.2018.

Two scientific staff attended Hindi word processing exam on 10.07.2018 at Hindi Teaching cell, Race Course, Coimbatore.

### Work carried out by Project Fellows

Sri Basil Paul, JPF collected the details of new taxa and new distribution records for the Flora of Kerala published during the year 2007- 2017. Consulted herbarium and collect details of *Hydrolea zeylanica* and *Carmona retusa*. Attended a workshop titled 'Second short – term course in Biostatistics' conducted by The Dept. of Botany, St. Xavier's College, Palayamkottai during 9th to 15th July 2018.

Sri P. Murugan, JPF collected the details of new taxa and new distribution records for the Flora of Kerala published during the year 2007-2017. Consulted herbarium for the family Valerianaceae and referred library for relevant references.

Sri M. Sulaiman, JPF collected the details of new taxa and new distribution records for the Flora of Kerala published during the year 2007- 2017. Identified 2 Orchids species. Attended a workshop titled 'Second short – term course in Biostatistics' during 9th to 15th July 2018.

Ms. M. Uma Maheshwari, JPF compiled data of Monochlamydeae species for Flora of Kerala. Attended a workshop titled 'Second short – term course in Biostatistics' during 9th to 15th July 2018.

### Visitors/students

During this month, 13 scientific personnel/officials/students/scholars visited the museum, herbarium and library of this regional centre whereas 170 persons in 48 parties visited the NO & EG, Yercaud.



Photo: SRC



Photo: SRC



Celebration of Van Mahotsav 2018 at Southern Regional Centre, BSI, Coimbatore

### Van Mahotsav 2018

Observed Van Mahotsava from 1st to 7th July 2018. Students of local schools participated in this programme and also planted saplings during this programme.

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

## WESTERN REGIONAL CENTRE, PUNE

Dr. Priyanka Ingle, Scientist 'B' and Ms. Madhuri Pawar, Sr. Pres. Asst. conducted one Botanic Garden inspection tour to Shivaji University, Kolhapur under Assistance to Botanic Garden during 4th to 6th July 2018.

Sri S.C. Patil, Bot. Asst. accompanied Sri Jayakrishna, Researcher from Calicut University during the one day local tour on 13.07.2018 towards Mulshi dam area for collection of fresh flowers of *Zingiber diwakarianum* for molecular studies.

### Specimen Identification

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 13 field numbers for the project, "Floristic diversity of Wan Wildlife Sanctuary, Maharashtra".

Sri S.C. Patil identified 44 field numbers for the project, "Flora of Pushpagiri Wildlife Sanctuary, Karnataka".

Smt. A.M. Neelima conducted Light microscopic studies of two orchids for the project, "Seed morphology and cyto-taxonomy of some selected orchids of Northern Western Ghats".

Dr. Sukumar Bhakta, Botanical Assistant identified 10 algal samples for the project, "Biodiversity assessment of microalgae from thermal springs of Maharashtra".

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

Sri D. Tripathi, Senior Project Fellow identified 123 species for the project, "Pteridophyte flora of Kudremukh National Park, Karnataka".

Dr. Rashmi Dubey, Scientist 'D' identified specimens of 27 field numbers for the project, "Taxonomic Studies of Micro fungi of Sanjay Gandhi National Park along with its 10% peripheral area".

Ms. Shreya Sengupta, Senior Project Fellow identified seven micro fungi for the project, "Microfungi of Biligiri Rangaswamy Temple wildlife Sanctuary, Karnataka".

### Public service rendered

During this month 13 plant specimens were identified and issued authentication certificates to students from B. Pharm, M. Pharm. colleges, Ph.D. and P.G. students from different institutions.

### Meeting/seminars/programmes attended

Dr. P. Lakshminarasimhan, Scientist 'E' & HoO attended the 2nd Review Meeting of the Expert Group Committee to assess the project progress work of Lead and Small Botanic Gardens under ABG Scheme on 16.07.2018 at Indira Paryavaran Bhawan, MoEF & CC, New Delhi.

Dr. J. Jayanthi, Scientist 'D' and Dr. J.S. Jalal, Scientist 'D' attended the inauguration of GSDP training course, "Parataxonomy including People's Biodiversity Register" at Zoological Survey of India, Pune on 16.07.2018.

Sri Sameer Patil, Dr. Sukumar Bhakta, Sri D. Jesubalan, Sri B.P. Kadam and Smt. A.M. Neelima attended two weeks training programme for the Botanical Assistants of Botanical Survey of India during 22nd June to 5th July 2018 at Central National Herbarium, Howrah towards the partial fulfillment of the criteria for the promotion to the post of Botanist.

### Visitors/students

A total of 66 students and five faculties from Euroschool, Wakad, Pune visited WRC on 19.07.2018.

Two students of Bachelor of Architecture, from Mumbai visited WRC on 23.07.2018.

About 12 Students from Joshi College, Pune visited WRC on 27.07.2018.



Photo: WRC

Celebration of Van Mahotsav Week 2018 at Western Regional Centre, BSI, Pune

### Van Mahotsav week 2018

Van Mahotsav week 2018 was organized at WRC, BSI, Pune during 1st to 7th July 2018. The programme commenced with the sapling plantation by the Chief Guest Sri A.K. Verma, Executive Engineer (E), PCED, CPWD, Nirman Bhawan, Mukund Nagar and followed by HoO, other Scientists and staff. Plantation of 150 indigenous saplings were undertaken during the period.

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



Dr. Anandi Subramanian, Sr. Economic Advisor and Sri Kumar Rajnish, National Programme Coordinator, MoEF & CC, New Delhi discussing on GSDP implementation activities with officials of BSI & ZSI at ZSI, Kolkata on 23.07.2018



Release of Pamphlet on 'Glimpses of Algae in India' during Eastern Regional Workshop on Conservation and Management of Wetlands at Central National herbarium, Botanical Survey of India, Howrah on 06.07.2018

*Thanks to all the scientists and staff of regional centres and units of BSI for contributing to this Newsletter*

© Botanical Survey of India  
Published by The Director, BSI, Kolkata  
Compiled and Edited by Dr. V. Sampath Kumar  
Scientist 'D', CNH, BSI, Howrah