

# BSI NEWSLETTER

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Kolkata – 700 064



## HEAD QUARTERS, KOLKATA

Dr. Devendra Singh, Scientist 'D' conducted a field tour to Jharkhand (Parasanath, Hazaribagh and Koderma Wildlife Sanctuaries) from 22nd October to 4th November 2018 and collected 186 specimens in connection with the 'Bryoflora of Jharkhand'.

### Identification of herbarium specimens

Dr. A.B.D. Selvam, Scientist 'D' identified specimens of four field numbers, collected from Andaman Islands as *Cycas andamanica* and *C. rumphii*. Dr. Selvam also studied the micro-morphological features of the pollen grains of a *Cycas rumphii* under Light Microscope (LM).

Dr. Kanad Das, Scientist 'D' identified specimens of field numbers KD 18-001, KD 18-006 and KD 18-007 as *Russula gnathangensis* sp. nov. (Russulaceae) and KD 18-21 as *Russula pseudoatropurpurea* sp. nov. (Russulaceae), which were collected from Sikkim.

Dr. R.K. Gupta, Scientist 'D' identified and illustrated two species of *Cynobacteria* viz., *Oscillatoria princeps* and *O. limosa* for thermal algae of Bihar.

Dr. Devendra Singh studied oil-bodies of 13 freshly collected specimens belonging to six species and taken microphotographs of *Cololejeaneo lutilobula* (Herzog) Tixier (71059B), *Spruceanthus minutilobulu* (Udar & U.S. Awasthi) Sushil K. Singh (71014), *Lopholejeunea sikkimensis* Steph. (71059A), *Lejeunea* sp. (71062), *Jungermannia stephanii* (Schiffn.) Amakawa (71186), *Fossombronia* sp. (71078).

Dr. Singh also prepared the camera lucida illustration and taken microphotographs of the *Cololejeaneo lutilobula* (Herzog) Tixier (71059B) collected from Jharkhand.

Dr. Monalisa Dey, Scientist 'B' identified 21 specimens belonging to 20 species collected from Darjeeling District, West Bengal: *Cheilolejeunea trapezia*, *Cololejeunea trichomanis*, *Dumortiera hirsuta*, *Frullania nepalensis*, *F. yuennanensis*, *Leptolejeunea elliptica*, *Marchantia subintegra*, *Metacalypogeia alternifolia*, *Pellia epiphylla*, *Plagiochila sciophila*, *Radula auriculata* and *Spruceanthus semirepandus*.

Dr. M.E. Hembrom, Botanist prepared ArcGIS map for the species *Perenniporia ochroleuca*, *Perenniporia* sp. 1 and *Perenniporia* sp. 2.

### Training/meeting attended/lecture delivered/talk organised

Dr. Kanad Das attended a DST sponsored training programme on "Science Administration and Research Management" conducted by Administrative Staff College of India, Bella Vista, Hyderabad from 22nd October to 2nd November 2018.

Dr. Das delivered a lecture on "Uncovering the mushroom treasure in Russulaceae (Basidiomycota) from Sikkim Himalaya with morphology and phylogenetic inferences" in the International Symposium on Fungal Biology: Advances, Applications and Conservation & 45th Annual Meeting of Mycological Society of India during 19th to 21st November 2018 Organised by Agharkar Research Institute, Pune.

In the above Symposium Dr. M.E. Hembrom also delivered a lecture on "Taxonomic study on the Corticoid fungi of Rajmahal hills, Jharkhand" and received Prof. Kamal Merit Awards for Young Scientists [by NFCCI-ARI] for best oral presentation.

Dr. Das also arranged a talk "Conflicting interests in the conservation of fungi and plants" delivered by Prof. Dr. Bart Buyck, Conservator of the National Mycological Herbarium, National Natural History Museum, Paris, France on 22.11.2018 at Auditorium of Central National Herbarium (CNH), BSI, Howrah.

Dr. Das also attended the meeting between ZSI and BSI for the establishment of National Centre for Biodiversity Genomics (NCBG) at Noida on 27.11.2018.

### Training imparted to GSDP students

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 30.11.2018.

### Publication

Singh, D.K., Majumdar, S. and Singh, D. 2018. *Udaria* – A new liverwort genus of Lophocoleaceae from Eastern Himalaya, India. *Curr. Sci.* 15(8): 1536–1542.

## CENTRAL NATIONAL HERBARIUM, HOWRAH

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. K. Karthigeyan, Scientist 'D' provided a literature "Kocyan, A. & Schuiteman, A. 2013. New Combinations in Aeridinae (Orchidaceae). *Phytotaxa* 161(1): 61–85 along with a high resolution herbarium image of *Rhinerrhiza divitiflora* (Orchidaceae)" to Sri Sarat Misra, Bhuvaneshwar.

### Lecture organised/meeting/programme attended

Dr. V. Sampath Kumar, Scientist 'D' attended the valedictory function of "Plant Tissue Culture techniques and its applications" conducted under Green Skill Development Programme at National Orchidarium & Experimental Garden (No & EG), BSI, Yercaud on 05.11.2018.

A lecture on "Conflicting interests in the Conservation of Fungi and Plants" by Bart Buyck, Natural History Museum, Paris organized at the CNH auditorium on 22.11.2018.

Dr. K. Karthigeyan attended the 29th state level steering committee for Sundarban Biosphere Reserve management at Aranya Bhavan, Salt lake, Kolkata on 26.11.2018.



Dr. V. Sampath Kumar at valedictory function of GSDP 'Plant Tissue Culture Course' at NO & EG, Yercaud

### Visitors/students

Dr. Kishore Kr. Mandal from North Orissa University for consulting General Herbarium on 13.11.2018.

Dr. Angela Bruch, Senckenberg Nat. Hist. Museum, Frankfurt, Germany for seeing the archival materials deposited in Type Herbarium II on 15.11.2018.

Dr. Nandini Chatterjee and Dr. Andrew Rudd, University of Exeter, England and Ms. Holly Morgenroth, Royal Albert Memorial Museum, Exeter, England on 16.11.2018 for consultation of Wallich's correspondence.

Prof. Barty Buyck, Conservator of the National Mycological Herbarium of France, National Natural History Museum, Paris, France on 22.11.2018.

Sri Praveen Garg, IAS, Additional Secretary & Financial Advisor to Ministry of Environment, Forest and Climate Change, New Delhi on 26.11.2018.

### Publications

Krishna, G. and Lakshminarasimhan, P. 2018. A new species of *Henckelia* (Gesneriaceae) from Arunachal Pradesh, India. *Taiwania* 63(4): 397–401.

Chakrabarty, T. and Sampath Kumar V. 2018. Lectotypification of four names in Indian *Cryptocarya* (Lauraceae). *J. Econ. Taxon. Bot.* 41(3-4): 135–136.

– Dr. V.P. Prasad  
Scientist 'D' & HoO

## INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

The botanical paintings by Roxburgh are being interpreted with updated nomenclature. Under this project, following five species of Poaceae were interpreted viz. *Panicum glaucum* L., *P. spicatum* (L.) Roxb., *P. involcuratum* Roxb., *Coix barbata* Roxb. and *C. gigantea* J. Koenig and following 15 species were described, namely *Alloteropsis cimicina* (L.) Stapf, *Arundo donax* L., *Bothriochloa saccharoides* (Sw.) Rydb., *Dendrocalamus strictus* (Roxb.) Nees, *Desmostachya bipinnata* (L.) Stapf, *Dichanthium foveolatum* (Delile) Roberty, *Digitaria ciliaris* (Retz.) Koeler, *Echinochloa oryzoides* (Ard.) Fritsch, *Iseilema prostratum* (L.) Andersson, *Oplismenus compositus* (L.) P. Beauv., *Panicum antidotale* Retz., *P. curviflorum* Hornem.; *Trachys muricata* (L.) Pers., *Echinochloa stagnina* (Retz.) P. Beauv.; *Urochloa panicoides* P. Beauv. From the family Orchidaceae following 15 species were also interpreted viz., *Acampe praemorsa* (Roxb.) Blatt. & McCann, *Arundina graminifolia* (D. Don) Hochr., *Bulbophyllum roxburghii* (Lindl.) Rchb.f., *Coelogyne punctulata* Lindl., *Cymbidium aloifolium* (L.) Sw., *Dendrobium aphyllum* (Roxb.) C.E.C. Fisch., *Luisia tristis* (G. Forst.) Hook. f., *Micropera rostrata* (Roxb.) N.P. Balakr., *Oberonia mucronata* (D. Don.) Ormerod & Seidenf., *Phalaenopsis amabilis* (L.) Blume, *Pholidota imbricata* Hook., *Pteroceras teres* (Blume) Holttum, *Thecostele alata* (Roxb.) E. C. Parish & Rchb.f. and *Vanda tessellata* (Roxb.) Hook. ex G. Don. Eight species of Pteridophytes were also interpreted.

### Database of Herbarium Specimens

As a part of preparing a database of herbarium specimens at BSIS, 170 numbers of Dicot herbarium specimens were listed and documented.

### Public service rendered

Under the Narcotic Drugs & Psychotropic Substances (NDPS) Act, 31 samples received from West Bengal Police were identified.

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

A training programme on Introduction of GPF module in EIS/PFMS system was organized on 13.11.2018. Mr. Subrata Diasi, Assistant Account Officer, PAO, Kolkata invited as a Resource Person.



Photo: ISIM

Dr. Suresh Gairola, Director General, ICFRI & Dr. Kailash Chandra, Director, ZSI visiting of ISIM Gallery

Sri Praveen Garg, IAS, Addl. Secretary & Financial Advisor, MoEF & CC visiting ISIM Gallery

### Visitors/students

Prof. Sushil Kr. Dutta (Retired), ISC, Bangalore and Dr. Rakesh Sharma, Head (Entomology), ICAR, New Delhi and Dr. Suresh Gairola, Director-General, ICFRI visited Botanical Galleries on 20.11.2018 and 21.11.2018 respectively.

Sri Praveen Garg, IAS, Addl. Secretary & Financial Adviser, MoEF & CC, New Delhi visited Botanical Galleries and J.D. Hooker Exhibition followed by a meeting with BSI officials on 26.11.2018.

– Dr. Manas Bhaumik  
Scientist 'D' & HoO

## ARID ZONE REGIONAL CENTRE, JODHPUR

Specimens of 97 field numbers has been identified during this period, under report, which were collected for different projects such as Dr. C.S. Purohit, Scientist 'B' identified 21 plant species collected from Tadgarh -Raoli WLS, Rajasthan i.e. Amaranthaceae: *Alternanthera bettzickiana* (CSP33508), *Amaranthus spinosus* (CSP33514); Caesalpiniaceae: *Chamaecrista pumila* (CSP33489); Convolvulaceae: *Ipomoea nil* var. *nil* (CSP33491), *I. turbinata* (CSP33517), *I. dichroa* (CSP33519); Cucurbitaceae: *Momordica charantia* (CSP33485), *Luffa acutangula* var. *amara* (CSP33497); Fabaceae: *Zornia gibbosa* (CSP33488), *Alysicarpus monilifer* (CSP33490), *Alysicarpus hamosus* (CSP33492), *Tephrosia strigosa* (CSP33510), *Indigofera linnaei* (CSP33512); Malvaceae: *Sida rhombifolia* (CSP33494), *Abutilon ramosum* (CSP33498), *Abutilon fruticosum* (CSP33513); Mimosaceae: *Acacia catechu* (CSP33495); Poaceae: *Perotis indica* (CSP33504), *Desmostachya bipinnata* (CSP33515); Rubiaceae: *Spermacoce pusilla* (CSP33484); Tiliaceae: *Corchorus aestuans* (CSP33503).

Dr. P. Harikrishna, Bot. Asst. and Sri Ramesh Kumar, Bot. Asst. identified 15 plant species collected from Bassi WLS. i.e. *Anisomeles indica* (035766); *Cardiospermum halicacabum* (035767); *Canscora diffusa* (035768); *Cymbopogon martini* (035770); *Sorghum halepense* (035771); *Celosia argentea* (035772); *Haplanthodes verticillatus* (035773); *Solanum americanum* (035775); *Grewia flavescens* (035776); *Oryza rufipogon* (035777); *Sehima nervosum* (035778); *Schoenefeldia gracilis* (035779); *Aeschynomene indica* (035780); *Hackelochloa granularis* (035781); *Ipomoea nil* (035783).

Dr. Ramesh Kumar, Scientist 'C' identified 25 plant species collected from Navsari District, Gujarat.

Dr. M.K. Singhadiya, Botanist and Ravi Prasad, Identified 21 plant species collected from Flora of Sariska Tiger Reserve, Alwar District, Rajasthan.

Dr. S.L. Meena, Scientist D, Identified 15 plant species collected from Flora of Jambughoda Wildlife Sanctuary, Gujarat.



C.S. Purohit delivering lecture at Machiya Biological Park, Jodhpur on 21.11.2018 (left); group photo of Forest staff and Forestry students at Machiya Biological Park, Jodhpur on 21.11.2018 (right)

### Lecture delivered

Lecture delivered by Dr. C.S. Purohit, Scientist 'B' on 21.11.2018 entitled "Present status and conservation of EET plants of Rajasthan" at conference hall of Machiya Biological Park, Jodhpur.

### Visitors/Students

Sri Lalit Kumar, M.V.Sc. Student Dept. of Veterinary Pharmacology and Toxicology, CVAS, visited herbarium on 12.11.2018.

– Sri Vinod Maina  
Scientist 'D' & HoO

## CENTRAL REGIONAL CENTRE, ALLAHABAD

One field tour was conducted to “Alwara Wetland”, Kaushambi, on 15.11.2018 for the project, ‘Floristic diversity of Alwara wetland, Kaushambi district and specimens of 76 field numbers were collected and specimens of 24 field number have been identified into 24 species.

For the project, ‘Cytotaxonomical studies of selected taxa of Indian subtribe Cassiinae’, cytological studies in *Senna italica* Mill. subsp. *italica* has been completed. Karyological studies in *Senna occidentalis* (L.) Link; *Senna alata* (L.) Roxb.; *Senna tora* (L.) Roxb. and *Senna obtusifolia* (L.) Irwin & Burneby are being done.

For the project SEM studies of the species belonging to family Acanthaceae (available at BSA), leaf epidermal biology of *Barleria gibsoni* Dalz. was studied under compound microscope. Comprehensive description of epidermal features of *Justicia adathoda* L. were completed.

For the project *ex-situ* conservation of Endemic, threatened and economic plant species in the associated garden of CRC and documentation of phenological data on flowering and fruiting every month and Phenological studies of existing plant species in the botanic garden of CRC, the Medicinal climber *Paederia foetida* L. (Rubiaceae) was introduced in the botanic garden. Out of total 618 plant species in the premises of CRC, phenological stages (criteria-wise) of 150 plant species with an increment in 23 number of more plants showing phenological characteristics were recorded during the month. Out of 150 species, 139, 66 and 29 species formed flowers, fruits and seeds respectively.

A total of 26 specimens were identified in connection with the project, ‘Identification of old unidentified specimens of BSA’.

### Green Skill Development Programme (GSDP) Certificate Course

Four month Certificate Course on Parataxonomy (including People’s Biodiversity Register) under GSDP programme was inaugurated on 19.11.2018 and all officers, Botanical Assistants and Post Doctoral Fellows were involved in imparting training to the participants through series of lectures. Dr. A.N. Shukla coordinating the programme.



Inaugural Programme of Certificate Course on Parataxonomy (including People’s Biodiversity Register) under Green Skill Development Programme on 19.11.2018

### Conference attended/paper presented

Dr. Arti Garg, Scientist ‘D’ attended Sixth International Conference on Plants and Environmental Pollution (ICPEP – 6), from 27th to 30th November 2018 at NBRI, Lucknow and presented a paper on “The Ramsar Convention – A Bid to Conserve the Wetlands of National Importance”.

– Dr. G.P. Sinha  
Scientist ‘E’ & HoO

## EASTERN REGIONAL CENTRE, SHILLONG

One local field tour was conducted to Mawklot, Meghalaya on 26.11.2018 to take photograph of fruiting of *Illex khasiana* for 'Micro-propagation of RET Plants of Northeast India' by L. Ibemhal Chanu, Botanist.

Herbarium consultation tour to Central National Herbarium from 26th November to 8th December 2018 by Dr. R. Daimary, Botanist for "Flora of Eastern Nagaland (Mon, Tuensang, Kiphire & Longleng)".

For the project, 'Flora of Nagaland' (Vol. I & 2) by Dr. N. Odyuo and Dr. D.K. Roy, Botanist

ca 2246 field numbers of Herbarium specimens were sorted out in to families (ca 116 families) and folders (ca 126 numbers) to make them easy for further works namely identification.

35 specimen listed and identified 20 species for the project, "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.

For the project, 'Genus *Riccia* (Marchantiophyta) in India' Dr. S.K. Singh, Scientist 'D' identified 14 samples of *Riccia* collected from Tamil Nadu. Dr. Singh also confirm the identity of five species of *Riccia* received from Dr. Manju, Kerala and also 15 samples belong to 15 species of liverworts from Nagaland.

For the project, "DNA barcoding and Phylogenetic analysis of 20 selected endemic plant species of Northeast India and Phytochemical Screening of 11 medicinal Plants" Dr. D. Vijayan, Scientist 'C' and Dr. D.K. Roy, Botanist inoculated seeds of *Pyrenaria camelliflora* in Woody Plant Medium (WPM) and Murashige and Skoog (MS) Medium for seed germination studies. They also Inoculated the nodal explant excised from the shoot tips of *Rhododendron formosum* and *Rhododendron iteophyllum* in Murashige and Skoog (MS) Medium and Woody Plant Medium (WPM) and transferred 15 numbers of *in vitro* raised plants of *Pyrenaria khasiana* for acclimatization in the greenhouse.

Qualitative phytochemical analysis of the following plants to check the presence of bioactive compounds (proteins, carbohydrates, flavonoids, saponins, glycosides, phenols and tannins, steroids and terpenoids) using standard methodology: *Hedyotis scandens* (leaves and stem), *Hedyotis vestata* (leaves and stem), *Goniothalamus simonsii* (leaves and bark), *Stemona tuberosa* (tuber), *Clerodendron indicum* (leaves and stem).

For the project, 'Diversity and phylogeny of aquatic fungi from North east India' by Dr. Ashish Venkatesh Prabhugaonkar, Scientist 'B' Isolated, prepared micro-photographs and permanent slides of 10 more fungi and efforts were made to get rare fungi in culture and following cultures were obtained successfully *Acrostalagmus* sp., *Epicoccum* sp., *Gyrophthrix* sp., *Mariannaea aquatica* Kurniawati, *Parahaplotrichum* sp., *Phaeoisaria* sp. and 2 still unidentified interesting isolates. Sent a fungal isolate for sequencing of ITS and LSU gene regions as requirement of publication.



Photo: C. Deory

***Impatiens acuminata* Benth. ex Hook.f. & Thomson  
(Balsaminaceae) – an endemic species to Meghalaya**

For the project, 'Red Listing of Orchids of Eastern Himalaya as per IUCN criteria' Dr. David Lalsama Biate, Scientist 'B', working on 306 taxon data sheets to finalize different components including synonyms, taxonomic history (citation), phenology, habitat, distribution (global and Indian context).

For Flora of India Project, "Vol. 20. Acanthaceae: Genus *Strobilanthus* of North-Eastern India and Himalaya" (ca. 70 spp.) by Dr. D.K. Roy, screening of herbarium specimens of *Strobilanthes* spp. housed in ASSAM: Recorded 22 taxa and Total 72 taxa were recorded under the genus *Strobilanthes* from ASSAM collected from NE India.

For the project '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' Observed and recorded phenological data of flowering and fruiting of 52 plant species which are available in the garden by Sri L.R. Meitei, Bot. Asst.

### **Symposium/meeting/function attended/lecture delivered**

Dr. Ashish V. Prabhugaonkar, Scientist 'B' attended 'International Symposium on Fungal Biology: Advances, Applications and Conservation' and 45th annual meeting of mycological society of India from 19th to 21st November 2018 organised by National Fungal culture collection of India at Agharkar research Institute, Pune, Maharashtra. Dr. Prabhugaonkar also gave a lead lecture entitled, 'Reinstating glory of Indian Anamorphic Fungi in the age of Molecular Phylogeny' and also co-chaired a session in the conference.

Dr. Dilip Kr. Roy, Botanist delivered a talk on 27.11.2018 to a group of 10 members from NESFAS (North East Slow Food & Agro-biodiversity Society) on-Plant samples collection, Preparation and Maintenance of Herbarium at ERC, BSI, Shillong.

Inaugural function of Sangai Festival at Imphal, Manipur was attended by Dr. A.A. Mao, Scientist 'F', Dr. Chaya Deori, Scientist 'D' and Dr. Deepu Vijayan, Scientist 'C' in connection with the book release of "Checklist of Orchids of Manipur- A Pictorial Handbook" authored by Dr. A.A. Mao and Dr. Chaya Deori on 21.11.2018.

### **Publications**

Deori, C., Tham, B.B.T., Talukdar, S.R., Adamowski, W. and Gogoi, R. 2018. Lectotypification of *Impatiens acuminata* Benth. ex Hook.f. & Thomson and notes on its geographical distribution. *Biodiv. Res. Conserv.* 50: 33-38.

Mao, A.A. and Deori, C. 2018. *Check-list of Orchids of Manipur—A Pictorial Handbook*. Forest Department, Government of Manipur and Botanical Survey of India, Government of India. MRB publisher, Guwahati.

Prabhugaonkar, A. and Pratibha, J. 2018. *Aureobasidium khasianum* (Aureobasidiaceae) a novel species with distinct morphology. *Phytotaxa* 374 (3): 257–262.

**– Dr. C. Deori**  
Scientist 'D' I/c & HoO



## NORTHERN REGIONAL CENTRE, DEHRADUN

Identified 41 and described total 18 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, Plant diversity of Cold Desert Biosphere Reserve, Lahul-Spiti, North-West Himalaya–Analysis, Pictorial Flora of Pteridophytes of Uttarakhand, Revision of Genus *Adiantum* L. in India.

### Digitization of herbarium specimens

Scanned and digitized 119 specimens of the family Rubiaceae and of Pteridophytes.

### Programme/meeting attended/lecture delivered organised

Dr. Kumar Ambrish, Scientist 'D' & HoO attended GSDP Certificate Course on Parataxonomy including PBR Inaugural function as special guest and given a lecture on Plant Diversity of India on 16.11.2018 in the office of ZSI, Dehradun.



Photo: Puneet Kumar

Dr. Kumar Ambrish attended GSDP Certificate Course Inaugural function as special guest in the office of ZSI, Dehradun

Dr. Ambrish delivered lecture on "Significance and Upcoming Trends in Plant Taxonomy" organized by the Botany Division of Dolphin PG Institute, Dehradun and Academy of Plant Sciences, India.

Dr. Puneet Kumar delivered lecture as a session speaker on "Chromosomal studies in some selected plants from Lahul-Spiti (A cold desert in Northwest Himalaya)" in National Conference on Multidisciplinary Approaches of Plant Sciences organized by Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun.

Dr. B.S. Kholia, Scientist 'D' attended meeting as the representative of the Director, BSI in G.B. Pant Institute of Himalayan Environment and Sustainable Development at Koshi Katarmal, Almora.

Dr. Kholia attended meeting on 22nd Annual General Meeting of Wildlife Institute of India (WII) – at MoEF & CC on 14.11.2018.



Photo: : Kapil Kharakwal

Sri Rajni Kant attending M.Sc., Botany students of Alpine college during their visit to NRC, BSI, Dehradun

### Visitors/students

70 students of M.Sc., Botany from BFIT, Dehradun and Alpine College, Dehradun.

### Publications

Christopher, R. Fraser-Jenkins, Alan R. Smith, Charles E. Jarvis, Mary Gibby, Michael G. Price, Barbara S. Parris and Kholia, B.S. 2018. Proposal to conserve the name *Polypodium parasiticum* (*Thelypteris parasitica*, *Christella parasitica*) (Thelypteridaceae) with a conserved type. *Taxon* 67 (5): 1031–1032.

– Dr. Kumar Ambrish  
Scientist 'D' & HoO

## SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. M. Palanisamy, Scientist 'D' and Dr. S.K. Yadav, Botanist conducted a Botanical exploration to Goa coast from 22nd October to 2nd November 2018 and vouched specimens of 204 field numbers, besides specimens of 15 field numbers stored in the liquid form of marine macro algae. They also completed identification of 30 field numbers of algal specimens and collected eight references pertaining to the study area.

Dr. C. Murugan, Scientist 'D' & HoO and Dr. S. Arumugam, Bot. Asst. conducted Botanical exploration from 16th to 22nd November 2018 at Megamalai WLS, Tamil Nadu and vouched specimens of 169 field numbers and also completed identification for specimens of 50 field numbers from the earlier collections.

As a part of *Ex-situ* conservation of endemic endangered and threatened Plants, Dr. S. Kaliamoorthy, Scientist 'D' and Dr. T.S. Saravanan, Bot. Asst. conducted one plant exploration to Mukurthi National Park, Nilgiris, Tamil Nadu from 16th to 22nd November 2018 and collected and introduced 35 plant species into the National Orchidarium and Experimental Gardens (NO & EG), Yercaud.



Photo: SRC

Dry deciduous forest at Elumalai section, Megamalai Wildlife Sanctuary, Tamil Nadu



Southern Tropical Wet Evergreen forest at Singalteri in Kalakkad Mundathurai Tiger Reserve, Tamil Nadu



Photo: SRC

Research team at Velappar Kovil area, Megamalai Wildlife Sanctuary, Tamil Nadu



*Carissa carandas* (Apocynaceae)

### Herbarium Identification

Dr. K.A.A. Kabeer, Scientist 'D' and Sri A. Ravi Kiran, Bot. Asst. completed identification for specimens of 20 field numbers from Kodaikanal Wildlife Sanctuary.

Dr. J.H. Franklin Benjamin, Scientist 'C' and Sri Rakesh G. Vadhyar, Bot. Asst. completed identification of specimens for 28 field numbers from Kanniyakumari WLS, Tamil Nadu.

Dr. R. Manikandan, Scientist 'D' and Ms. R. Mahela Devi, Sr. Pres. Asst. completed identification of specimens for 30 field numbers from Cauvery North WLS, Tamil Nadu.



Photo: SRC

*Ceropogia juncea* (Apocynaceae)*Eugenia singampattiana* (Myrtaceae)

Photo: SRC

*Paphiopedilum hirsutissimum* (Orchidaceae)

30 11 2018

*Paphiopedilum spicerianum* (Orchidaceae)

Photo: SRC

*Paphiopedilum villosum* (Orchidaceae)*Garcinia imberti* (Clusiaceae)

In connection with documentation of Phytodiversity, Dr. C. Murugan and Dr. S. Arumugam completed identification for specimens of five field numbers and descriptions were also completed for five species of Cyperaceae of Tamil Nadu.

In the Survey and Documentation of Economical and Ethnobotanical uses of endemic trees of India, Dr. K.A. Sujana, Scientist 'D' and R. Saravanan, Bot. Asst., CBL, BSI, Howrah started to compile the final project report.

#### **Ex-situ conservation**

Dr. S. Kaliamoorthy, Scientist 'D', Dr. M.Y. Kamble, Scientist 'D' and their team multiplied 83 plants belonging to 16 genera and recorded the phenological data of 21 plants, including 10 orchids and 11 other Angiosperms at National Orchidarium and Experimental garden (NO & EG), Yercaud.



GSDP Trainees of “Plant Tissue Culture Techniques and its application” course performing inoculation of explants using Laminar Air Flow Chamber (left); Release of Study manual at the GSDP “Plant Tissue Culture Techniques and its application” course valedictory function at NO & EG, BSI, Yercaud

### Flora of India

Sri Basil Paul, JPF conducted one Herbarium Consultation to KFRI, Peechi, Trissur, Kerala from 12th to 16th November 2018 and consulted 637 herbarium specimens pertaining Gamopetalae part II. Sri P. Murugan, JPF conducted one Herbarium Consultation to KFRI, Peechi, Trissur, Kerala from 12th to 16th November 2018 and consulted 637 herbarium specimens pertaining Gamopetalae part I. Ms. M. Uma Maheshwari, JPF conducted one Herbarium Consultation to KFRI, Peechi, Trissur, Kerala from 12th to 16th November 2018 and consulted 620 herbarium specimens pertaining Monochlamydeae. Sri M. Sulaiman, JPF conducted one Herbarium Consultation to KFRI, Peechi, Trissur, Kerala from 12th to 16th November 2018 and consulted 620 herbarium specimens pertaining Monocot.

### Scanning Electron Microscopy (SEM)

Ms. R. Mehala Devi and Ms. M. Ananthalakshmi, Sr. Pres. Assts., completed descriptions of 15 species of tribe Cyperae based on SEM studies and four species of tribe Cyperae nutlets were separate out from the herbarium specimens. Dr. S. Kaliamoorthy and Dr. T.S. Saravanan collected the pollinia from eight species of orchids and the same studied by using SEM.

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

Micropropagation as well as vegetative propagations of the *Vernonia shevaroyensis* Gamble shoots was subcultured, *Crotalaria shevaroyensis* Gamble Multiple shoot induction was done, Fifty five seeds were germinated and these plants were transferred into small bags. Besides, seeds of *Bentinckia condapanna* Berry ex Roxb. collected and processed for germination.

### Public service rendered

Identified 81 plant species for the students/research scholars of various institutions.

Dr. S. Arumugam, Sri Rakesh G. Vadhyar and Sri Ravi Kiran Arigela, Bot. Asst. delivered lectures on BSI and its activities to the students and research scholars from various research institutes. (Centre for Plant Breeding and Genetics, TNAU, CBE, Providence College for Women, Forest College and Research Institute, Mettupalayam, Dept. of Plant Genetic Resources, TNAU, CMS College, Kottayam, University of Kerala, Thiruvananthapuram, Maharajas College, Ernakulam, BAM College, Tiruvalla and Karnataka University, Dharwad).

### Meetings/training/seminar attended

Dr. C. Murugan attended training program on Scientific Administration and Research management from 22nd October to 2nd November 2018 at Administrative Staff College of India, Hyderabad, Telegana.

Dr. C. Murugan, Dr. R. Manikandan, and Dr. M. Murugesan, attended valedictory function of Green Skill Development program (Plant tissue culture and its application) at the NO & EG, Yercaud on 05.11.2018.

Dr. C. Murugan, Dr. R. Manikandan and S.P. Nithya attended the half year progress report of the project in RAC review meeting held on 10.11.2018 at the Wildlife Warden Office, Ramanathapuram.

Dr. M. Palanisamy attended State Board Wildlife Meeting held at CM Office, Secretariat, Trivandrum, Kerala on 12.11.2018.

Junior research fellows of this regional centre attended the two Ph.D viva voce examinations held at Kongunadu Arts and Science College, Department of Botany, Coimbatore on the topic, "Survey and Systematic studies on *Ceropegia* species (Apocynaceae) along the parts of Southern Western Ghats of Tamil Nadu, India and in vitro propagation of *Ceropegia bulbosa* Roxb." "Evaluation of habit suitability for lemon grass (*Cymbopogon citratus* (DC.) Stapf) cultivation in Southern Western Ghats of India and validation of *Ruellia patula* Jacq. A traditional medicinal plant used by lemon grass growers" on 30.10.2018 and 02.11.2018.

### Drawings made

Sri R. Suresh, Artist, illustrated eight illustrations/charts/boards.

### Visitors/students

During this month, 69 scientific personnel/officials/students/scholars visited the museum, herbarium and library of this regional centre whereas 216 persons in 24 parties and 319 students and 42 Forest trainees are visited the NO&EG, Yercaud.

### Publications

Kiran R.A. and Singh, R.K. 2018. on the identity of *Crotalaria nallamalayana* Rasingam & J. Swamy (Fabaceae). *Phytotaxa* 374(2): 177.

Kiran R.A. and Kabeer, K.A.A. 2018. *Cotoneaster buxifolius* Wall. ex Lindl., a vulnerable shrub species in Kodaikanal Wildlife Sanctuary, Tamil Nadu, India. *Curr. Sci.* 115: 1622.

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

## WESTERN REGIONAL CENTRE, PUNE

Sri Shrikant D. Ghodake, JPF conducted field tour to Bhadra Wildlife Sanctuary, Karnataka from 24th October to 4th November 2018 for the project, "Floristic Diversity of Bhadra Wildlife Sanctuary, Karnataka".

Ms. A.M. Neelima, Bot. Asst. conducted field tour to Amboli-Sawantwadi-Sindhudurg area of Western Ghats, Maharashtra from 31st October to 5th November 2018 for the project, "Seed morphology and cyto-taxonomy of some selected orchids of Northern Western Ghats".

Mr. D. Jesubalan, Bot. Asst. conducted field tour from 21st November to 5th December 2018 for the project, "Pteridophytic flora of Pushpagiri Wildlife Sanctuary, Karnataka with 10% periphery".

### Identification of Herbarium specimens

Dr. Priyanka Ingle, Scientist 'B' identified specimens of 10 field numbers for the project, "Floristic diversity of Wan Wildlife Sanctuary, Maharashtra".

Sri S.C. Patil, Bot. Asst. identified specimens of 35 field numbers for the project, "Flora of Pushpagiri Wildlife Sanctuary, Karnataka".

Ms. A.M. Neelima conducted chromosome study of one orchid species for the project, "Seed morphology and cyto-taxonomy of some selected orchids of Northern Western Ghats".

Sri D. Jesubalan 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 four field numbers for the project, "Taxonomic Studies of Micro fungi of Sanjay Gandhi National Park along with its 10% peripheral area".

Dr. A. Benniamin, Scientist 'D' identified five species for the project, "Pteridophytes of Goa".

### Public service rendered

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

### Symposium attended/lecture delivered

Dr. Rashmi Dubey attended an International Symposium on “Fungal Biology: Advances, Applications and Conservation” organized by National Fungal Culture Collection of India (NFCCI) MACS' Agharkar Research Institute, Pune from 19th to 21st November 2018 and delivered a lecture on “Taxonomic studies of saprobicmicrofungi of Sanjay Gandhi National Park, Mumbai, Maharashtra.

### Green Skill Development Programme (GSDP)

During this month three field tours were conducted for the trainee students of GSDP "Parataxonomy including People's Biodiversity Register (PBR)" training course. Field tours were conducted to Bhimashankar WLS on 19.11.2018, Mahabaleshwar Biodiversity park on 21.11.2018 and Matheran Eco-sensitive zone on 23.11.2018. The assessment exam was conducted on 27.11.2018. The Valedictory programme of the training course conducted on 28.11.2018 at WRC, BSI, Pune preceding the lecture on ‘Combating Wildlife crimes’ by Dr. M Maranko, Regional Director (WR), WCCB, Navi Mumbai. Dr. Vilas Bardekar, Chairman, Maharashtra State Biodiversity Board and Prof. B.B. Chaugule (Former Head of Botany Department, S.P. Pune University) were the guests of honour during the valedictory function.



Photo: WRC



Trainees of the Certificate Course on "Parataxonomy including People's Biodiversity Register (PBR)" under Green Skill Development Programme are on field tour to Bhimashankar WLS



Photo: WRC

GSDP trainees at Mahabaleshwar Biodiversity park



GSDP trainees at Matheran Eco-Sensitive Zone



Photo: WRC

Dr. Maranko delivering lecture on Wildlife Crime



GSDP students undertaking assessment exam



Photo: WRC



GSDP "Parataxonomy including People's Biodiversity Register (PBR)" training course  
Valedictory function and plantation programme

### Visitors/students

Dr. M. Sanjappa, former Director, BSI and Dr. Sringshwara and Dr. Sahana Vishwanath researchers from UAS, GKVK, Bengaluru, visited WRC, BSI, Pune for Herbarium consultation.

### Publications

Dubey, R. 2018. Some rare and interesting fungal species of phylum Ascomycota from Western Ghats of Maharashtra: A taxonomic approach. *J. New Biological Report* 7(3): 120–136.

Ughade, B.R., Khillare, V.C., Sangale, D.M., Korhale, G.A., Ingle, P., Tathe, A.E., Patil, R. and Khedkar, G.D. 2018. A definitive method for distinguishing cultivated onion from its weedy mimic, *Asphodelus fistulosus*, at multiple developmental stages. *Weed Research* DOI: 10.1111/wre.12337.

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



Glimpses of training imparted to the trainees during Certificate Course on "Parataxonomy including People's Biodiversity Register (PBR)" under Green Skill Development Programme at Central National Herbarium, Botanical Survey of India, Howrah

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