

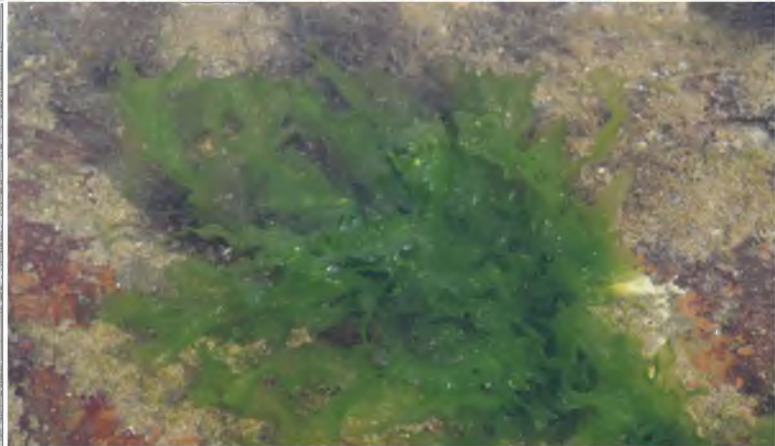
BSI NEWSLETTER

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CGO Complex, 3rd MSO Building, Block – F
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Kolkata – 700 064



HEAD QUARTERS, KOLKATA

In connection with the projects of Cryptogamic section, 'Studies on wild mushrooms of Sikkim', 'Studies on the macrofungi of AJC Bose Indian Botanical Garden, Howrah', 'Wood rotting fungi of Rajmahal hills' 'Revision of the family Metzgeriaceae in India', and 'Liverworts and Hornworts Flora of Darjeeling District, West Bengal' identification, description, drawings/camera lucida illustration/microphotography and distribution maps using ArcGIS were prepared by the scientific officials.

For the Project on "Pharmacognosy of Indian Cycads", the anatomical features of the leaf of *Cycas annaikalensis* was studied by Dr. A.B.D. Selvam, Scientist 'D' under Light Microscope (LM), which was collected from Palghat district, Kerala (field no. 4984).

Public service rendered

Dr. A.B.D. Selvam pharmacognostically studied and authenticated 4 wood samples as heartwood of *Pterocarpus santalinus* L. (Leguminosae), which were received from Directorate of Revenue Intelligence (DRI), Aizawl sub-regional unit, Mizoram.

Dr. A.B.D. Selvam also pharmacognostically studied and authenticated a vegetable crude drug as the fruits of *Coccinia grandis* (L.) Voigt (Curcubitaceae), which was received from M/s Emami Ltd., Kolkata.

Dr. A.B.D. Selvam also pharmacognostically studied and authenticated 5 vegetable crude drug samples as detailed below, which were received from Banaras Hindu University, Varanasi, Uttar Pradesh.

Piper longum L. (Piperaceae) – Fruits; *Piper longum* L. (Piperaceae) – Roots; *Piper retrofractum* Vahl (Piperaceae) – Fruits; *Plumbago zeylanica* L. (Plumbaginaceae) – Roots; *Zingiber officinale* Roscoe (Zingiberaceae) – Rhizomes.

Meeting attended /lecture delivered

Dr. Manoj Emanuel Hembrom, Botanist and Sri Arvind Parihar, Bot. Asst. attended a meeting at Bikas Bhavan, Salt Lake, Kolkata in connection with project proposal on "Assessment of diversity and distribution of plants, algae and macrofungi in the Sundarbans biosphere reserve, India".

Scientific Officials attended the valedictory function of Green Skill Development Programme (GSDP) Foundation Course – Biodiversity Conservationist at Zoological Survey of India, New Alipore, Kolkata on 20.10.2017.

Visitors/students

Ms. K.M. Manjula, Research scholar, Department of Botany, Zamorin's Guruvayurappan College College, Calicut, Kerala visited Cryptogamic section for consulting Bryophyte specimens.

Publication

Das, S.K. and Singh, D. 2017. Cyanobacterium from Larsemann Hills, East Antarctica. *Nelumbo* 59 (1): 105–109.

Das, K., Ghosh, A., Chakraborty, D., Li, J., Qiu, L., Baghela, A., Halama, M., Hembrom, M. E., Mehmood, T., Parihar, A., Pencakowski, B., Bielecka, M., Reczynska, K., Sasiela, D., Singh, U., Song, Y., Swierkosz, K., Szczesniak, K., Uniyal, P., Zhang, J. and Buyck, B. 2017. Fungal Biodiversity Profiles 31-40. *Cryptogamie, Mycologie* 38: 353–406.

Ghosh, A. and Das, K. 2017. *Russula* (Russulaceae) in western Himalaya 1: Two new species from subg. *Russula*. *Phytotaxa* 323: 237–252.

Hembrom, M.E., Das, K., Parihar, A. and Sengupta, C. 2017. *Hymenochaete conchata* (Hymenochaetaceae), A new record for indian mycobiota. *Indian J. Pl. Sci.* 6(3): 1–9 (Online).

Sinha, B.K., Singh, S.K., Kumar, R. and Pandey, S. 2017. *Ex-situ* conservation of Orchids in Experimental Botanical garden, Barapani and Woodland campus Shillong. In: P. Singh and S.S. Dash (eds.) *Indian Botanic Gardens Role in conservation*. BSI, Kolkata, pp. 296–334.

CENTRAL NATIONAL HERBARIUM, HOWRAH

Dr. V.P. Prasad, Scientist 'D' corrected the identity of 3 Cyperaceae specimens.

Dr. Vinay Ranjan, Scientist 'D' and Sri Anant Kumar, Bot. Asst. identified specimens of 12 field numbers collected from Neora Valley National Park, Darjeeling district, West Bengal.

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

Dr. Kumar Avinash Bharati, Scientist 'B' identified specimens of 22 field numbers collected from Baraila lake Salim Ali Jubba Sahni Bird Sanctuary, Vaishali District, Bihar.

Sri P.P. Ghoshal, Botanist identified specimens of seven field numbers collected from of Betla National park, Latehar, Jharkhand.

Public Service rendered

Dr. V. Sampath Kumar, Scientist 'D' provided information about the types of *Uncaria* specimens (Rubiaceae) available at CAL to Dr. Ian Turner, Singapore Liaison Officer, RBG, Kew. Further, availability of the Burmese specimen annotated by S. Kurz as *U. sessilifolia* (= *U. macrophylla*) at General herbarium was also informed.

Dr. K. Karthigeyan, Scientist 'D' reviewed two articles received from journal *Rheedea*.

Dr. Subir Bandyopadhyay, Scientist 'B' provided PDF of seven pages from [*Bull. Torrey Bot. Club* 90(3): 186–192. 1963] & of 409 pages of Flora of Assam, Volume 2 to Dr. M. Sanjappa, former Director, BSI, Bengaluru and of seven pages (*J. Econ. Taxon. Bot.* 16(2): 425–431. 1992) to Dr. Tapas K. Chakraborty, Assistant Professor in Botany, Rishi Bankim Chandra College, Naihati, North 24-Parganas, West Bengal.

Dr. Avisek Bhattacharjee, Scientist 'B' sent images of 11 type specimens belonging to the family Convolvulaceae to Sri Pantamith Rattanakrajang, Plant Systematic and Anatomy Laboratory (N204), Mahidol University, Bangkok, Thailand; 3 type-images of Rubiaceae to Prof. M. Sabu, Calicut Univ., Kerala.

Dr. Bharati provided sample data to Dr. Fred Kemp, Deputy Head of Technology Transfer – Digital Health and Bioinformatics, Oxford University Innovation Ltd., Buxton Court, 3 West Way, Oxford regarding customization of BHAHMS for BSI databases.

Sri Shyam Biswa, Bot. Asst. Identified three plant specimens which have come from Faculty of Ayurveda, IMS, BHU, Varanas.

Meetings/Seminar/conference attended

Dr. K. Karthigeyan, Scientist 'D', attended a meeting on Floristic studies in Sunderbans Biosphere Reserve held at Bikash Bhawan, Salt Lake on 16.10.2017.

Dr. Bharati, Scientist 'B' attended a meeting with technical experts of CSICO, HP, Z-COM, GS computers, Vortex Company, D-link, Sea Info Tech. and Ruckus regarding establishment of Wi-Fi infrastructure in the CNH building.

Visitors/students

30 students accompanied by four teachers from Hojai College, Assam on 17.10.2017.

30 students accompanied by two teachers from B.P. Chaliha College, Nagarbera, Assam on 25.10.2017.

24 students of B.Sc. (Botany) from Dhing College, Dhing, Nagaon, Assam on 27.10.2017.

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

INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

As a part of preparing a database of herbarium specimens at BSIS, 100 numbers of Dicot herbarium specimens were listed and documented.

Updating of nomenclature of digitized Herbarium Specimens at BSIS

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

Botanical Paintings

The botanical paintings by Roxburgh are being interpreted with updated nomenclature. Under this project, 15 Poaceae members in Icones Roxburghianae were listed.

Public service rendered

Under the Narcotic Drugs & Psychotropic Substances (NDPS) Act, nine samples received from West Bengal Police, of which four were identified during this month.

Exhibition/conference organized/participated

Dr. A.K. Sahoo, Scientist 'D' participated as one of the four Indian delegates in the International Conference on 'Popularization of Science' held at Kuala Lumpur, Malaysia from 4th to 6th October 2017 organized by the 'Institute of Learning Education', Oregon State University in collaboration with U.S. National Science Foundation and co-host with National Science Centre, Petrosains, Malaysia.



Photo: ISIM

Dr. A.K. Sahoo at International Conference on Popularization of Science held at Kuala Lumpur



Dr. P. Singh, Director, BSI addressing during opening ceremony of Exhibition on Botanical heritage of India

Organized Exhibition on 'Botanical Heritage of India' at India International Centre, New Delhi from 27th October to 7th November 2017 in collaboration with RBG, Kew; CWEH, University of Sussex, UK; MoEFCC, Govt. of India & India International Centre, New Delhi. The function Inaugurated by Ms. Manju Pandey, Joint Secretary, MoEF & CC, Dr. Paramjit Singh, Director BSI, Prof. Deepak Kumar, University of Delhi, Prof. Dasgupta, JNU and many other distinguished Guests and dignitaries. The Inaugural function was attended by Dr. M. Bhaumik. Sri. B.C. Dey and Sri Surindar Sharma made all arrangements for the exhibition from 25th October to 7th November 2017.



Officials of ISIM, BSI taking Integrity Pledge during Vigilance awareness week

Vigilance awareness week

Officials of ISIM, BSI, observe Vigilance awareness week and take pledge on 31.10.2017 .

– Dr. Manas Bhaumik
Scientist 'D' & HoO

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Herbarium sheets Scanned: 881 numbers of family Lauraceae, Monimiaceae and Myristicaceae.

Herbarium details computerized in Excel format: 942 herbarium specimens of families Euphorbiaceae and Orchidaceae were fed in the computer in a prescribed format.

Meeting(s)/function(s) attended /organised

Dr. Lal Ji Singh, Scientist 'D' & HoO attended a prayer meeting on the auspicious occasion of Gandhi Jayanti at Mahatma Gandhi Statue, Mohanpura, Port Blair on 02.10.2017.

Dr. Singh attended an inaugural function of Sea Route to Baratang Island and Laying of foundation stone for extension of new dry dock, Port Blair, extension of Wharf, Hope Town, Construction of Additional Jetty and extension of Berthing Jetty, Neil Island by Shri Rajnath Singh, Minister of Home Affairs, Shri Nitin Gadkari, Minister of Shipping, Highway & Water Resources, River Development & Ganga Rejuvenation at Port Blair on 05.10.2017.

Organized valedictory function of Green Skill Development Programme, Foundation Course—Biodiversity Conservationist at ANRC, BSI on 06.10.2017.

Dr. Singh attended Ph.D Thesis Viva-voice on 'A Study of Geological and Tectonic Controls on Cave Development in Andaman Group of Islands through a Geographical Technique' at Pondicherry University Campus, Port Blair on 06.10.2017.

Dr. Singh attended swearing-in-ceremony of Admiral D. K. Joshi, PVSM, AVSM, YSM, NM, VSM (Retd.) as Lieutenant-Governor of Andaman & Nicobar Islands at Raj Niwas on 08.10.2017.

Dr. Singh attended valedictory function of 63rd Wildlife Week Celebration, 2017 organized by Department of Environment & Forests, Andaman & Nicobar Administration at Port Blair on 10.10.2017

Dr. Singh attended an inaugural function of One Week Workshop for Forest Rangers at Forest Training Institute, Wimberlygunj on 23.10.2017 and delivered a lecture on Conservation and Management of Rare Endangered & Threatened (RET) and Endemic Flora of Andaman & Nicobar Islands for One Week Workshop for Forest Rangers at Forest Training Institute, Wimberlygunj, South Andaman on 24.10.2017.



Sri S.A. Awaradi, Director, Andaman & Nicobar Tribal Research and Training Institute, Port Blair at Herbarium (left) and library (right), ANRC, BSI during his visit on 17.10.2017

Visitors

Dr. Mayur D. Nandikar, Principal Investigator, Naoroji Godrej Centre for Plant Research, Shindewadi and Dr. Nilesh Malpure, SSGM College, Sirdi, Maharashtra along with two research scholars visited herbarium, library and garden on 04.10.2017, 11.10.2017 and 13.10.2017.

Shi Joju P. Alappatt, Director, FTI, Wimberlygunj visited herbarium and library for consultation on 05.10.2017 and 20.10.2017.

Sri S.A. Awaradi, Director, Andaman & Nicobar Tribal Research and Training Institute, Port Blair visited herbarium and library on 17.10.2017.

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

ARID ZONE REGIONAL CENTRE, JODHPUR

Dr. C.S. Purohit, Scientist 'B' and Dr. RN Kulloli, PDF conducted one field survey tour to Jaisalmer district from 1st to 8th October 2017 in connection with GIS Mapping of EET species of Rajasthan and collected specimens of 24 field numbers.



Photo: AZRC

Flowering of *Andrographis paniculata* (Acanthaceae) at Botanical Garden, AZRC, BSI, Jodhpur



Flowering of *Mimosa pudica* (Mimosaceae) at Botanical Garden, AZRC, BSI, Jodhpur



Photo: AZRC

Fruiting of *Commiphora wightii* (Burseraceae) at Botanical Garden, AZRC, BSI, Jodhpur



Glossonema varians (Apocynaceae) at Jaisalmer, Rajasthan

Identification of herbarium specimens

Specimens belonging to 119 Field numbers were identified during this month by the scientific officials.

Public service rendered

Identified four plant specimens received from other organisations.

Lecture delivered/programme organized/attended

Dr. C.S. Purohit, Scientist 'B' delivered one lecture on 04.10.2017 on present status and conservation of EET plants of Rajasthan at Swami Vivekanand Govt. Model School, Fatehgarh (Jaisalmer).

Dr. S.L. Meena, Scientist 'D' delivered a lecture on Rajasthan Vegetation types to M.Sc. Students of Mahila P.G. College, Jodhpur during their visit to AZRC, Jodhpur on 06.10.2017.

Sri Vinod Maina, Scientist 'D' & HoO attended a programme of 63rd Wildlife week organized by State Forest Department, Rajasthan at Machia Safari Biological Park, Jodhpur on 07.10.2017



Sri Vinod Maina, Scientist 'D' & HoO delivering lecture on the occasion of 63rd wildlife week at Jodhpur



Sri Yashvir Singh, Economic Advisor, MoEF & CC visited Museum, AZRC, Jodhpur on 02.10.2017



Sri R.S. Shekawat, Addl. PCCF, Jodhpur with Sri Yashvir Singh in Swachata Hi Seva programme

Jointly organised *Swachata Hi Seva* programme along with Zoological Survey of India (DRC), AFRI, ENVIS Centre (Centrl Arid Zone Research Institute) and State Forest Department, Jodhpur from 29th September to 2nd October 2017. Sri R.S. Shekawat, Addl. PCCF, Jodhpur and Sri Yashvir Singh, Economic Advisor, MoEF & CC, New Delhi participated in this programme.

Visitors /students

Sri Yashvir Singh, Economic Advisor, MoEF & CC, visited Museum on 02.10.2017.

Research Scholar, MDS University, Ajmer, Rajasthan visited Herbarium on 03.10.2017

Dr. Avinash Bohra, Assistant Professor and 18 M.Sc. Botany students of Mahila P.G. College, Jodhpur visited Herbarium, Botanical Garden and Museum on 06.10.2017.

Publication

Kumar, R., Sharma, S., Sinha, B.K. and Purohit, C.S. 2017. Recollection of Some plants for Mizoram After Gage (1901) from Murlen National Park, Champhai. *Indian J. Forestry* 40(3): 293–300.

– Sri Vinod Maina
Scientist 'D' & HoO

CENTRAL REGIONAL CENTRE, ALLAHABAD

A field tour to Sikkim was conducted by Dr. Pooja Gupta, AJCBPDF from 30th September to 12th October 2017 in connection with the project 'A taxonomic revision of the genus *Lecidea* Ach. in India'.

Dr. A.K. Verma, Scientist 'B' conducted a field tour to Chitrakoot from 11th and 12th October 2017 and collected *Senna obtusifolia*, *Chamaecrista pumila*, *Chamaecrista absus* for 'Cytotaxonomical studies of selected taxa of Indian subtribe Cassiinae'.

Dr. Sheo Kumar, Scientist 'E' along with Sri Rajesh Kumar, Bot. Asst. conducted a two days field tour on 11th and 12th October 2017 in Chitrakoot area of Madhya Pradesh and Uttar Pradesh for collection of endemic, threatened and economic plant species for their conservation under *ex-situ* conservation in the garden premises of Central Regional Centre of BSI, Allahabad. Total 59 species comprising 16 species of Aquatic plants including two fern species and 43 species of terrestrial plants including one each of fern and Orchid were collected and introduced in the Garden.

Photo: A.N. Shukla



Mixed deciduous forest of Chitrakoot

Dr. Arti Garg, Scientist 'D', Dr. A.N. Shukla, Scientist 'B' and Dr. A.P. Tiwari, Bot. Asst. conducted a field tour to Chitrakoot, District Satna, Madhya Pradesh from 23rd to 27th October 2017 for collaborative project, 'Studies of fossil and living plants with reference to the impact of climate change on flora of gangetic Plains and Central India'. Specimens of 48 field numbers were collected. They also brought seedlings of three species viz. *Alectra parasitica* subsp. *chitrakutensis*, *Zingiber zerumbet* and *Citrus* sp. for introduction in the BSI Garden.

Identification of herbarium specimens

A total of 72 specimens under 24 species were identified for the project, 'Floristic Diversity of Bhoj Wetland, M.P.'

A total of 123 specimens were identified in connection with the project, 'Identification of old unidentified specimens of BSA'.

Taxonomic description of 20 species were completed under the project, 'Trees of Allahabad city and its Environs'.

Dr. G.P. Sinha, Scientist 'E' & HoO, updated nomenclature, consequential changes in key to genera and species and editing of families Ebenaceae, Symplocaceae, Oleaceae and Salvadoraceae under the project, 'Editing of Flora of Uttar Pradesh, Vol. II'.

Dr. Arti Garg carried out pollen studies of *Cassia fistula*, *Senna tora*, *Bauhinia variegata*, *B. vulgaris* and *B. tomentosa*. Stomatal frequency patterns on leaf surface of these species through SEM and LM has been worked out.

Dr. A.K. Verma updated nomenclature of 11 species and Dr. Nitisha Srivastava, Bot. Asst., completed taxonomic description of six species under 'Flora of Chhattisgarh' Vol. II.

Public service rendered

Sri Vineet Kumar Singh, Bot. Asst., authenticated two plant specimens received from different institutions viz., *Ficus racemosa* and *Rotheca serrata*.

Programme organized/meeting attended

Dr. G.P. Sinha organized Swachhta Abhiyan in CRC, BSI complex on 02.10.2017.

Dr. G.P. Sinha attended CGEWC meeting at A.G. Office on 27.10.2017.

Dr. Arti Garg and Dr. A.N. Shukla attended meeting with the Scientists of Birbal Sahani Institute of Palynology, Lucknow (Dr. A. Farooqui, Scientist 'F' and team) on 10th and 11th October 2017 in connection with work completed till September, 2017 and work plan for the forthcoming quarters of 2017-18.

Visitors/students

M.Sc. and B.Sc. students of Department of Botany, Mahila Mahavidyalaya, Varanasi, Uttar Pradesh visited Herbarium and garden of CRC, BSI, Allahabad on 04.10.2017.

M.Sc. students of Department of Botany, HN Bahuguna PG College, Naini, Allahabad visited Herbarium (BSA) and garden of CRC, BSI, Allahabad on 10.10.2017.

Publications

Shendge, A.K., Basu, T., Sinha, G.P. and Mandal, N. 2017. Assessment of the Antioxidant activity and phytochemical analysis of a lichen, *Everniastrum cirrhatum* (Fr.) Hale ex Sipman., *World J. Pharm. and Pharmaceut. Sci.* 6(9): 1440–1464.

Verma, A.K. and Dhawan, S.S. 2017. Chromosomal fragmentation: A possible marker for the selection of high gymnemic acid yielding accessions of *Gymnema sylvestre* R. Br. *Pharmacognosy Mag.* 13: 481–383.



Photo: A.N. Shukla

Dr. G.P. Sinha briefing about activities of BSI to the students of Mahila Mahavidyalaya, Varanasi

– Dr. G.P. Sinha
Scientist 'E' & HoO

DECCAN REGIONAL CENTRE, HYDERABAD

Dr. G. Swarnalatha, Bot. Asst. documented five macro lichen specimens for the project “Inventory of Macrolichen diversity of Odisha State”.

Identification of herbarium specimens

Dr. K. Chandra Mohan, SPF, identified eight species for the project, “Flora of Satkosia Tiger Reserve”, Odisha.

Digitisation of Herbarium specimens

600 herbarium sheets were scanned belonging to various families at BSID.

Public service rendered

Dr. J. Swamy identified nine plant specimens for three different Universities of Telangana and Andhra Pradesh states.



Sri Rakesh Kumar, Director, MoEF & CC planting a tree as a part of *Swachhta Hi Seva* campaign



Cleaning drive by DRC, BSI officials at nearby village as a part of *Swachhta Hi Seva* campaign

Meeting attended/programme organized

Dr. J. Swamy, delivered talk on Herbarium methodology at A.V. College, Department of Botany, Hyderabad on 25.10.2017.

Dr. J. Swamy explained about the importance of Red Sanders plant to Kadapa District Collector and other officials of the district on the event of Adavibaata (Nature Walk) Programme on 29.10.2017 at Rajampet Forest Division of Kadapa district, Andhra Pradesh.

Observed vigilance awareness week on 30th October, 2017.

Dr. Sankararao Mudadla, Scientist ‘B’ attended Andhra Pradesh State Biodiversity board meeting on 17.10.2017 at Vijayawada, Andhra Pradesh.

Organized the *Swachhata Hi Seva* campaign at office premises from 30th September to 1st October 2017. Sri Rakesh Kumar, Director, Ms. Shawini Garg, Sri Vijay Bhatt, MoEF & CC and 20 National Service Scheme (NSS) volunteers planted plants on the eve of *Swachhata Hi Seva* campaign from 30th September to 1st October 2017.

Visitors

Sri Pramod R. Lawand, Research fellow of The new college, Kolhapur, Maharashtra visited this centre for herbarium consultation from 3rd to 5th October 2017.

Publication

Chandramohan, K., Prasanna, P.V., Sankara Rao, M. and Kiran, E. 2017. *Lindernia molluginoides* (Benth.) Wettst. (Linderniaceae) - A rare species from Eastern Ghats. *Indian J. Forestry* 40(3): 287–288.

Dr. L. Rasingam
Scientist ‘D’ & HoO

EASTERN REGIONAL CENTRE, SHILLONG

During the period, two field tours was conducted by Ashish Venkatesh Prabhugaonkar, Scientist 'B' to Tura and Baghmara, Garo Hills, Meghalaya from 27th Septemebrr to 1st October 2017 and 28.10.2017 for collecting litter samples of *Nepenthes khasiana*, *Wallichia* sp., *Citrus latipes*, *Calamus* sp., *Mesua ferreea*, etc. and by Dr. M. Murugesan, Scientist 'B' to Sumer forest areas of Ri-Bhoi district, Meghalaya on 05.10.2017 and collected total 39 plant individuals under 8 species and planted them at Botanical Garden, Barapani.

During this period, total 59 species were identified for Flora of Nagaland (Vol. 1 & 2) by Dr. A. A. Mao, Scientist 'F', Dr. N. Odyuo, Scientist 'D' and Sri D.K. Roy, Bot. Asst.; 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., and for Flora of Eastern Nagaland by Dr. N. Odyuo and Dr. R. Daimary, Bot. Asst.

Dr. S.K. Singh, Scientist 'D' consulted literature pertaining to study of genus *Riccia*. viz., Bryophytes of India Ricciaceae by K.P. Srivastava and protologue of *Riccia gangetica* for 'Taxonomic Revision of genus *Riccia* (Marchantiophyta) in India'.

Observed and recorded phenological data of flowering and fruiting of 61

plant species viz., *Acampe rigida*, *Acampe ochracea*, *Ageratum conyzoides*, *Albizia lucidior*, *Allamanda cathartica*, *Anoectochilus roxburghii*, *Arundina graminifolia* var. *gramnifolia*, *Bauhinia variegata*, *Bixa orellana*, *Bougainvillea glabra*, *Calanthe sylvatica*, *Caryota urens*, *Catunaregam spinosa*, *Cheilocostus speciosus*, *Cleisostoma paniculatum*, *Cleisostoma racemiferum*, *Coelogyne ovalis*, *Coelogyne punctulata*, *Cymbidium elegans*, *Dendrobium amplum*, *Dendrobium chapaense*, *Dendrobium chrysanthum*, *Dendrobium moschatum*, *Dienia ophrydis*, *Dillenia indica*, *Dracaena angustifolia*, *Elaeocarpus floribundus*, *Eurya acuminate*, *Exbucklandia populnea*, *Gastrochilus dasypogon*, *Globba racemosa*, *Hedychium aureum*, *Hedychium flavescens*, *Hedychium flavum*, *Itea macrophylla*, *Jacaranda mimosifolia*, *Lagerstroemia indica*, *Lagerstroemia speciosa*, *Liparis cordifolia*, *Liparis odorata*, *Magnolia champaca*, *Melastoma malabathricum*, *Micromelum integerrimum*, *Nepenthes khasiana*, *Oberonia mucronata*, *Paphiopedilum insigne*, *Phaius mishmensis*, *Pholidota articulata*, *Pholidota imbricata*, *Rauvolfia serpentina*, *Schima wallichii*, *Sterculia hamiltonii*, *Tabernaemontana divaricata*, *Taxus wallichina*, *Vanda coerulea*, *Zeuxine affinis*, *Zingiber meghalayense*, *Zingiber murlenica*, *Zingiber mizoramensis*, *Zingiber neotruncatum* and *Zingiber zerumbet* available at Experimental Botanic Garden, Barapani by Dr. M. Murugesan and Sri L.R. Meitei.

Under Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of Selected Species by Dr. Deepu Vijayan, Scientist 'B', extracted DNA from *Platenthera* sp. and *Habenaria* sp.

Dr. Ashish Venkatesh Prabhugaonkar studied collected samples and Isolated 15 fungal isolates and identified *Chloridium reniforme*, *Coronophora* sp., *Cryptophiale* sp., *Dictyosporium elegans*, *Excipulariopsis narsapurensis*, *Goidanichiella scopula*, *Helicoma* sp., *Kramasamuha* sp., *Leptoxyphium* sp., *Neosporidesmium*, *Sporidesmiopsis* sp., *Stromatoglyphium stromaticum*, *Tamhinispora indica*.

Meeting attended/training programme organised

Dr. A.A. Mao attended Research Advisory Group meeting of Rain Forest Research Institute, Jorhat on 9th and 10th October 2017.

Dr. A.A. Mao attended meeting of the State Level Steering Committee for approving the Management Action Plan of Manas Biosphere Reserve and Dibru-Saikhuwa Reserve for the 2017-2018 to 2021-2022 held on 23.10.2017 in the conference hall of Additional Chief Secretary to the Govt. of Assam.

A five day training program on basics of plant identification and nomenclature was organized at ERC, BSI, Shillong with the aim to spread knowledge and awareness in the field of plant taxonomy. A total of 29



Gleadowia konyakianorum

participants from various institutes along with host institutional candidates participated in this program. Dr. S.K. Singh, Dr. N.Odyuo, Dr. Chaya Deori, Dr. M. Murugesan, Dr. Deepu Vijayan, Dr. A.A. Mao delivered lectures during the workshop and Dr. Ashish V. Prabhugaonkar guided students in preparing Microscopic illustration.

Visitors/students

Seven Professor, two research scholars, 88 students and six other visitors from various Institutions, Colleges and Universities visited the Centre.

Publications

Odyuo, N., Roy, D.K. and Averyanov, L.V. 2017. *Gleadovia konyakianorum* (Orobanchaceae), a new species from Nagaland, India. *Phytotaxa* 326(4): 274–278.

Pratibha, J., Prabhugaonkar, A. and Mao, A.A. 2017. *Fusiconidium indicum* (Melanommataceae) a novel species of asexual Ascomycetes. *Phytotaxa* 326(2): 108–114.

Mao, A.A., Vijayan, D., Pradhan, S. and Nilasana Singha, R.K. 2017. In vitro propagation of *Rhododendron macabeianum* Watt ex Balf.f., an endangered and endemic Rhododendron species from Manipur and Nagaland, India. *Ind. J. Plant Physiol.* DOI 10.1007/s40502-017-0309-9.

Singh, S.K. 2017. Liverwort and hornwort diversity in botanic gardens of Botanical survey of India, Shillong and Barapani. In: P. Singh and S.S. Dash (eds.) *Indian Botanic Gardens Role in conservation*. BSI, Kolkata, pp. 248–259.

– Dr. A.A. Mao
Scientist 'F' & HoO

NORTHERN REGIONAL CENTRE, DEHRADUN

Identified total 55 species and made description for 45 species of Angiosperm in connection with the projects, Flora of Himachal Pradesh Vol. I, Floristic Diversity and Phytosociological study of Simbalbara National Park, Flora of Nandhour Wildlife Sanctuary, Flora of Sonanadi Wildlife Sanctuary, Revision of family Bignoniaceae, Cyatheaceae and genus *Lepisorus* (Sm.) Ching in India.

Digitization of Herbarium specimens

87 specimens of the family Rubiaceae and of Pteridophytes scanned and digitized.

Public Services rendered

Identified 13 species received from different institutes/universities.

Swacch Bharat Abhiyaan

Dr. Kumar Ambrish, Scientist 'D' & HoO organized "Swachta Abhiyan" in the office campus on 02.10.2017 for *Parthinium/Lantana*/Polythene eradication and also cleaned the campus.



Photo: Devraj

Officials of NRC, BSI, Dehradun taking pledge for cleanliness

Visitors/students

A batch of 28 students from Doon P.G. College, Dehradun visited the centre.

Publications

Kumar, P., Singhal, V.K. and Srivastava, S.K. 2017. First Detection of Cytomixis and its consequences in *Thalictrum cultratum* Wall. (Ranunculaceae). *Cytology and Genetics* 51(5): 384–390.

Debta, M.R., Srivastava, S.K. and Patel, M. (2016) 2017. Ethno-medicinal notes from Jamankira block of Sambalpur district, Odisha, Part-2. *Ethnobotany* 28: 40-44.

– Dr. Kumar Ambrish
Scientist 'D' & HoO

SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. M. Palanisamy, Scientist 'D' and Dr. S.K. Yadav, Bot. Asst. conducted a seaweed collection tour to Goa coast from 6th to 15th October 2017 and vouched 189 field numbers. They also identified specimens of 10 field numbers.



Photo: M. Palanisamy

Panoramic view of Mormugao coast, Goa

Ulva fasciata (Ulvaceae)



Photo: M. Palanisamy

Mixed growth of seaweeds at Goa coast

Dr. M.Y. Kamble, Scientist 'D' and Dr. Saravanan undertook one day plant collection tour to Ghat Road (Yercaud) on 11.10.2017.

Dr. S. Kaliamoorthy, Scientist 'D' and Dr. T.S. Saravanan, Bot. Asst. conducted two local plant collection tours to Shevaroy Temple, Manjakuttai and Pattipadi Velur (Yercaud) on 26th, 27th and 28th October 2017.

Herbarium Identification

Dr. C. Murugan, Scientist 'D' & HoO and Dr. S. Arumugam, Bot. Asst. identified specimens of 61 field numbers in connection with Meghamalai WLS, Tamil Nadu. Dr. K.A.A. Kabeer, Scientist 'D' and Sri A. Ravi Kiran, Bot. Asst. identified specimens of 15 field numbers in connection with Kodaikanal WLS, Tamil Nadu. Dr. J.H. Franklin Benjamin, Scientist 'C' and Sri Rakesh G Vadhyar, Bot. Asst. identified specimens of 32 field numbers for Flora of Kanniyakumari WLS, Tamil Nadu. Dr. R. Manikandan, Scientist 'D' and Mrs. R. Mehala Devi, Sr. Pres. Asst. collected 8 reference for "Assessment of Plant diversity in Cauvery North Wildlife Sanctuary, Tamil Nadu". Under the documentation of Phytodiversity for Cyperaceae of Tamil Nadu, Dr. C. Murugan, Dr. J.V. Sudhakar, Bot. Asst. and Dr. S. Arumugam identified 10 Cyperaceae members and completed taxonomic description for 5 species of *Bulbostylis*.

Ex-situ conservation

Dr. S. Kaliamoorthy, Dr. M.Y. Kamble and his team introduced 7 species of Orchids into the National Orchidarium and Experimental Garden (NOEG), Yercaud. They also multiplied 80 samples belonging to 23 taxa, transplanted 7 taxa, developed 7 cuttings and recorded the phenological data of 26 plants.

Digitisation of Herbarium specimens

During this month, a total of 2527 herbarium sheets were barcoded.

Public service rendered

51 digital images of herbarium specimens belonging to the families Lauraceae (37 images to Dr. Deepu Sivadas, TBGRI, Palode, Trivandrum) and Poaceae (14 images to Ms. Thoiba, Scholar, Calicut University, Kerala) were provided.

Dr. M. Palanisamy and Dr. S.K. Yadav delivered a lecture on the topic “Concepts and Methods of Herbarium” and demonstrated hands on training to four postgraduate Agricultural students, Dept. of Plant Genetic Resources, TNAU on 05.10.2017.

Dr. J.V. Sudhakar delivered a lecture on the topic “formula and floral diagram” to TNAU Plant Genetic Resources (PGR) students in connection with their collaboration with BSI for teaching Plant taxonomy.

Dr. T.S. Saravanan explained the garden activities and conservation methods at NOEG, Yercaud to Forester trainees (Tamil Nadu Forest Academy, Coimbatore) on 03.10.2017.

Dr. J.V. Sudhakar, Dr. S. Arumugam, Mr. Rakesh G. Vadhyar and Mrs. R. Mehala Devi delivered lectures about BSI, Museum and MH Collections and about nomenclatural types to Botany students from Kerala & Tamil Nadu: FMN College, Kollam (23.10.2017), Carmel College, Thrissur (26.10.2017), NSS Collge, Manjeri (30.10.2017) and Devanagure University (30.10.2017).

Programme observed/seminar attended

The Foundation day of SRC, BSI, Coimbatore was observed on 10.10.2017. Dr. R. Gopalan, former Scientist of BSI and chief-guest of the function delivered talk on history of this Centre.

Dr. C. Murugan, Dr. S. Arumugam and Dr. V. Ravichandran attended National seminar on ‘Reaching the Unreached through Science and Technology - Concepts, Principles and Application of Science and Technology for Nation Building’, held at Kongunadu Arts and Science College, Coimbatore from 9th to 10th October 2017. Dr. C. Murugan delivered a lecture on ‘Green Emerald: Andaman & Nicobar Islands’.



Photo: V. Ramesh

Plantation ceremony on the occasion of SRC foundation day celebrated on 10.10.2017

The scientific officials of the centre attended the Ph.D. Viva-voce of Ms. S. Sambooranam, Research Scholar, thesis entitled “Floristic analysis of Anthiyur forest, Eastern Ghats, India” held at Karpagam University on 26.10.2017.

Dr. J.H. Franklin Benjamin attended Wildlife Research Meeting on 27th & 28th October 2017 at the Advanced Institute for Wildlife Conservation, Vandalur, Chennai.

Visitors/students

During this month, 60 scientific officials/students visited the museum, herbarium and library of this regional centre whereas 1496 persons under 137 parties visited the NOEG, Yercaud.

Publications

Singh, R.K. 2017. Lectotypification of three Linnaean names in *Impatiens* (Balsaminaceae). *Phytotaxa* 321 (3): 299–300.

Singh, R.K. 2017. A new combination and lectotypification of two names in the Genus *Nostolachma* (Rubiaceae). *J. Jpn. Bot.* 92(5): 294–298.

Singh, R.K. 2017. Lectotypification of the Linnaean name *Banisteria benghalensis* (Malpighiaceae). *J. Jpn. Bot.* 92(5): 299–302.

– Dr. C. Murugan
Scientist ‘D’ & HoO

WESTERN REGIONAL CENTRE, PUNE

Sri Devandra Tripathi, SPF conducted one field tour to Kudremukh National Park, Karnataka and also consulted herbarium of the Mahatma Gandhi Memorial (MGM) College, Udupi from 27th September to 14th October 2017 for the project, "Pteridophyte flora of Kudremukh National Park, Karnataka with 10% periphery".

Dr. A. Benniamin, Scientist 'D' conducted one field tour to unexplored areas of Karnataka from 29th September to 12th October 2017 for the project, 'Ferns of Karnataka'.

Sri S.C. Patil, Bot. Asst. conducted one herbarium consultation tour to JCB, FRLHT and Mysore University from 22nd to 28th October 2017.

Dr. Sukumar Bhakta, Bot. Asst. proceeded on Antarctica expedition 2017 for the project, "Ecology and taxonomy of psychrophilic benthic and lithic algal community from inland Antarctica" from 25th October 2017 to 20th January 2018.

Identification of herbarium specimens

Dr. J. Jayanthi, Scientist 'D' identified specimens of 50 field numbers for the project, 'Floristic Diversity of Biligirirangaswamy (BRT) WLS, Karnataka'.

Dr. Priyanka Ingle, Scientist 'B' identified specimens of 17 field numbers for the project, 'Floristic Diversity of Wan Wildlife Sanctuary, Maharashtra'.

Dr. C.R. Jadhav, Botanist identified specimens of 15 field numbers for the project, 'Floristic survey of Someshwara Wildlife Sanctuary, Karnataka'.

Sri S.C. Patil has identified specimens of seven field numbers for the project, 'Flora of Pushpagiri Wildlife Sanctuary, Karnataka'.

Dr. A. Benniamin identified specimens of five field numbers for the project, 'Ferns of Karnataka'.

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

Sri D. Tripathi, Senior Project Fellow identified four Pteridophyte species for the project, "Pteridophyte flora of Kudremukh National Park, Karnataka with 10% periphery".

Dr. Rashmi Dubey, Scientist 'D' identified four fungal species for the project, 'Taxonomic Studies of Microfungi of Sanjay Gandhi National Park along with its 10% peripheral area'.

Smt. Shreya Sengupta, Senior Project Fellow identified five micro fungi for the project, 'Microfungi of Biligiri Rangaswamy Temple wildlife Sanctuary, Karnataka'.

Public services 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/conference attended

Dr. P. Lakshminarasimhan, Scientist 'E' & HoO attended the consultative meeting of Stake holders for implementation of Section 38 of the Biological Diversity Act 2002 on 09.10.2017 at Chennai organized by National Biodiversity Authority.

Dr. J. Jayanthi and Dr. Rashmi Dubey attended the Regional Conference on Environment 2017 organized by National Green Tribunal, Pune on 7th and 8th October 2017 at Dhanvantri Auditorium, AFMC, Pune.

Green Skill Development Programme (GSDP)

During this month under GSDP about 3 topics related to floral diversity were covered by nine resource persons. Topics such as Horticulture and Nursery techniques [that covered preparation of land, methods of raising plants from seeds, various vegetative propagation methods (Cutting, Layering, Grafting, Budding), manuring, watering and protection of plants, Basics of Tissue culture technique, Visit to a Tissue culture Lab, Composting method] Conservation issues and efforts [Major environmental issues with reference to Maharashtra, Introduction to Community conservation initiatives (Flora), sacred groves, Protected areas in India (with special focus to the state), Medicinal Plants Conservation Areas (MPCAs), Non-Timber forest Produce (NTFP), Biodiversity Acts, Flora and fauna in Scheduled list Wildlife Protection act (1972), Wetland laws], Nature guide training [Introduction and definition-Nature trail, nature guide, Role of a Nature guide, Introduction to ecotourism, Personal conduct with the visitors, Interaction with the visitors] were covered.



Field visit to Tamhini Wildlife Sanctuary, Maharashtra by the GSDP trainees for Nature Guide Training

Visitors/students

Sri Ganesh Pawar and Sri Suraj Patil, Research Scholars, Shivaji University, Kolhapur visited WRC for herbarium consultation of family Ebenaceae and Acanthaceae respectively from 9th to 11th October 2017. Two research students from University of Calicut, Kerala visited for herbarium consultation.

Publications

Lakshminarasimhan, P. and Neelima A.M. 2017. A report on the second Botanical Nomenclature Course organised by Botanical Survey of India at Pune. *Nelumbo* 59(1): 118–120.

Benniamin, A., Siva, N. and Manickam, V.S. 2017. *Ex-situ* Conservation in Kodaikonal Botanical Garden from Southern Western Ghats, India. In: P. Singh and S.S. Dash (eds.), *Indian Botanic Gardens Role in Conservation*. BSI, Kolkata, pp. 281–294.

Dr. P. Lakshminarasimhan
Scientist 'E' & HoO



Dichrostachys cinerea subsp. cinerea (LEGUMINOSAE: MIMOSOIDEAE), commonly known as sickle bush, native to South Asia. This small tree is commonly cultivated for ornamental purposes in gardens and also some extent in households.

Photo: D.L. Shirodhkar



Valedictory function of Green Skill Development Programme, Foundation Course — Biodiversity Conservationist at ZSI, Kolkata on 20.10.2017



Dr. Manju Pandey, Joint Secretary, MoEF & CC, New Delhi and Dr. P. Singh, Director, Botanical Survey of India inaugurating the 'Exhibition on Botanical Heritage of India' at India International Centre, New Delhi on 27.10.2017

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

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