



BSI NEWSLETTER

The monthly electronic newsletter of Botanical Survey of India

Director's column

In this month, the scientists of BSI described new species in the families Orchidaceae (*Bulbophyllum paramjitii* from Sikkim Himalayas and *Crepidium meghalayense* from Khasi hills) and Poaceae (*Dimeria andamanica* from Andaman and Nicobar Islands). A new hyphomycetous fungus, *Colemaniella biligiriense* is also described from Biligirirangan hills of Western Ghats. On the other hand, a bird nest fungus, *Cyathus gayanus* is reported for the first time from Asia based on the collection from NE India. A Scrophulariaceae member, *Veronica anagaloides* is reported as new record for India from Western Himalayas. The species, *Gentiana saginoides* (Gentianaceae) is rediscovered after a gap of 155 years from Western Himalayas (Uttarakhand).

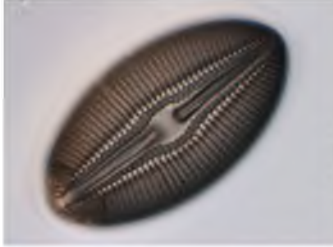
The scientific officials of BSI have undertaken field tour to various regions of the country in connection with their ongoing projects. Some of them are: tour to Karnataka coastal regions to collect seaweed specimens; tour to Sanjay Gandhi National Park, Maharashtra to collect fungal specimens; tour to Kishanpur WLS to collect Lichen specimens; tour to Darjeeling Himalayas to collect Bryophyte specimens; tour to Kudremukh National Park, Karnataka to collect Pteridophyte specimens; tour to Pushpagiri WLS, Karnataka to collect Pteridophyte and Angiosperm specimens; tour to Netravali WLS and Cotigaon WLS to collect orchid specimens; to Schoolpaneshwar WLS, Gujarat; Sariska Tiger Reserve and Machiya Biological Park, Rajasthan to collect flowering plant specimens; and tour to Odisha to collect ethnobotanical information.

During this month, *Hindi diwas/saptah/pakhwara* was celebrated by all the regional centres and units, in which various competitions in Hindi were held. The prizes were also distributed to the winners of the competition. Besides, Hindi workshop was also organized in some regional centres to promote *Rajbhasha*.

Jai Hind!

Paramjit Singh

Director, Botanical Survey of India, Kolkata



HEAD QUARTERS, KOLKATA

Dr. Monalisa Dey, Scientist 'B' undertaken a field tour to Darjeeling district (Lloyd's Botanical Garden, Ghum, Tiger hill, Lepchajagat, Takdah, Tinchuley) from 31st August to 9th September 2016. 121 field numbers of specimens were collected by Dr. Dey.

Dr. Sudipta Kumar Das, AJCBPDF conducted a tour to GEER Foundation, Gandhinagar, Gujarat for providing advisory service for authentication of phytoplanktons of Gulf of Kachchh and also conducted a library and herbarium consultation tour to Agharkar Research Institute, Pune, Maharashtra for identification of some diatoms in connection with the research project entitled, 'Taxonomic diversity and ecology of cyanobacteria and algae in the alpine regions of Eastern Himalayas' from 12th to 27th September 2016.

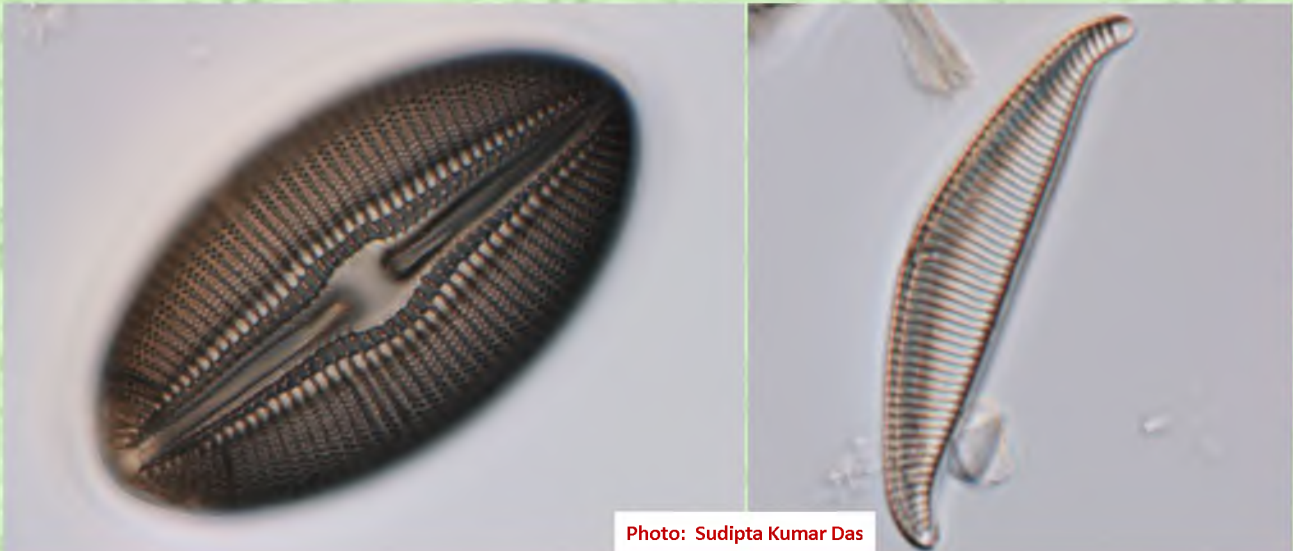


Photo: Sudipta Kumar Das

Diploneis subovalis (Diatom)

Rhopalodia gibba (Diatom)

In connection with the ongoing projects on 'Algal Flora of Jharkhand', 'Studies on wild mushrooms of Sikkim', 'Studies on the macrofungi of AJC Bose Indian Botanical Garden', 'Revision of the family Metzgeriaceae in India' 'Liverworts and Hornworts Flora of Darjeeling District, West Bengal' and 'Wood rotting fungi of Rajmahal hills', the scientific officials of Cryptogamic units made identifications, descriptions, microphotographs and illustrations. The officials also actively engaged in preparation for the exhibition and seminar on "Joseph Hooker: Botanical Trailblazer and the Botanical Heritage of India" organized by BSI in joint collaboration with the University of Sussex, U.K. to be held from 1st and 2nd October 2016 at Industrial Section Indian Museum, BSI, Kolkata.

Dr. Devendra Singh, Scientist 'C' identified 13 liverworts and mosses specimens to six species, collected from Larsemann Hills, East Antarctica and unidentified specimens housed at CAL herbarium. Dr. Singh also prepared the microphotoplates/SEM plates of *Bryum argenteum* var. *argenteum*, *Coscinodon lawianus*, *Guembelia longirostris* and *Bryerythrophyllum recurvirostrum*.

Sri Arvind Parihar, Bot. Asst. accessioned and incorporated 50 Fungi samples including 16 Holotype and two Paratype specimens received from Prof. Manimohan, Department of Botany, University of Calicut: *Inocybe suvarna* - Holotype (Accession No. CAL 1343); *Inocybe babruka* - Holotype (Accession No. CAL 1344); *Inocybe pingala* - Holotype (Accession No. CAL 1345); *Inocybe kapila* - Holotype (Accession No. CAL 1346); *Inocybe kapila* (Accession No. CAL 1347, 1348, 1349); *Inocybe snigdha*- Holotype (Accession No. CAL 1350); *Inocybe sukandha* - Holotype (Accession No. CAL 1351); *Inocybe kurkuriya* - Holotype (Accession No. CAL 1352); *Inocybe vamana* - Holotype (Accession No. CAL 1353); *Inocybe vamana* (Accession No. CAL 1354, 1355); *Inocybe rekhankitha* - Holotype (Accession No. CAL 1356); *Inocybe viraktha* - Holotype (Accession No. CAL 1357); *Inocybe akirna* - Holotype (Accession No. CAL 1358); *Inocybe akirna* (Accession No. CAL 1359); *Inocybe saraga* - Holotype (Accession No. CAL 1360); *Inocybe kuruvensis* - Paratype (Accession No. CAL 1361); *Inocybe pileosulcata* (Accession No. CAL 1362, 1363, 1364, 1365, 1366, 1367,

1368); *Inocybe stellata* (Accession No. CAL 1369, 1370, 1371); *Inocybe papilliformis* (Accession No. CAL 1372, 1373, 1374, 1375); *Inocybe hydrocybiformis* (Accession No. CAL 1376, 1377, 1378); *Inocybe purpureoflavida* (Accession No. CAL 1379, 1380); *Inocybe flavosquamulosa* (Accession No. - CAL 1381, 1382); *Inocybe virosa* (Accession No. CAL 1383, 1384); *Entoloma magnum* - Holotype (Accession No. CAL 1385); *Entoloma luteodiscum* - Paratype (Accession No. CAL 1386); *Rhodocybe rubrobrnnea* - Holotype (Accession No. CAL 1387); *Lyophyllum agnijum* - Holotype (Accession No. CAL 1388); *Laccaria violaceotincta* - Holotype (Accession No. CAL 1389); *Laccaria violaceotincta* (Accession No. CAL 1390, 1391, 1392).

Workshop attended/lecture delivered

Dr. Sudipta Kumar Das, AJCB PDF participated in one day workshop on 'Challenging Issues of Participatory Biodiversity Conservation of the Mangroves and Sustainable Livelihoods' organised jointly by Indian Institute of Bio-Social Research and Development (IBRAD), Kolkata and Botanical Survey of India, Kolkata on 10.09.2016 at IBRAD, Kolkata.

A lecture, "Diversity and conservation of wild Himalayan mushrooms" was delivered in the Department of Botany, Gurudas College, Kolkata on 24.09.2016 by Dr. Kanad Das, Scientist 'D'.

Public service rendered

Dr. A.B.D. Selvam, Scientist 'D' evaluated a Ph.D. thesis, "Assessment of Phytochemical Profile and Bioactive Potential of *Maerua apetala* (Roth) Jacobs (Capparaceae)" received from Manonmaniam Sundaranar University, Tamil Nadu.

Dr. Kanad Das reviewed a manuscript for the journal *Mycokokeys*.

Visitors/students

40 students (B.Sc. 2nd year) of Garhbeta College on educational visit to Central National Herbarium on 16.09.2016.

Publication

Wisitrassameewong, K., Looney, B.P., Le, H.T., De Crop, E., Das, K., Van de Putte, K., Eberhardt, U., Jiayu, G., Stubbe, D., Hyde, K.D., Verbeken, A. and Nuytinck, J. 2016. *Lactarius* subgenus *Russularia* (Basidiomycota, Russulales): novel Asian species, worldwide phylogeny and evolutionary relationships. *Fungal Biology* 30: 1–28.

AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

Special drive is taken for de-weeding and cleaning of different divisions and vantage points in the garden. Preparation of bed for winter flower plantation is under progress.



Photo: AJCBIG

De-weeding and cleaning of different divisions and vantage points in the AJC Bose Indian Botanic Garden, Howrah

Plantation drive in different divisions of AJC Bose Indian Botanic Garden, Howrah

Installation of flex/PVC boards with quotations, route directions, maps etc. installed at various points in the garden.

Dr. S.S. Hameed, Scientist 'D' planted 2 seedlings of *Ensete superbum* (stone banana) in Division no. 6 of the botanical garden.

The Great Banyan tree developed 6 new prop roots and was engaged in bamboo cages. 19 engaged aerial roots were repaired. New support has been provided to heavy branches at 6 new places.

Lawn Grass has been planted to an area of approximately 650 sq. ft from the gate of the 'old fence' towards the monument for beautification.

Dr. B.K. Singh, Sr. Pres. Asst. provided assistance to the Industrial Section Indian Museum (ISIM) in preparing the posters for displaying in the new gallery of ISIM and arrangements of the Exhibition on "Joseph Hooker: Botanical Trailblazer and the Botanical Heritage of India" to be held from 1st and 2nd October 2016 at ISIM, BSI, Kolkata.

Public service rendered

Dr. B.K. Singh accompanied Sri Ravinder Singh, IAS, Sri Ajay Dahiya, IAS and other Assistant Secretaries of MoEF & CC, New Delhi to Sunderban on 15.09.2016.

Meeting attended/lecture delivered

AJCBIBG officials attended meeting with CCU for assessment of CPWD works in AJCBIBG in the CNH Committee Room on 01.09.2016.

Dr. B.K. Singh delivered lecture on "Methodology of identification of Sunderban Mangroves" in the one day workshop on "Challenging Issues of participatory Biodiversity Conservation of the mangroves and sustainable livelihood", jointly organized by Indian Institute of Bio-Social Research and Development and Botanical Survey of India on 10.09.2016 at IBRAD, Kolkata.



Photo: AJCBIBG

Dr. B.K. Singh delivered lecture on the "Methodology of identification of Sunderban Mangroves" at IBRAD, Kolkata

Visitors/students

Sri A.K. Rastogi, Chief Engineer, CCU, New Delhi on 02.09.2016.

Higher Secondary students from Nowpara High School, Amta, Howrah (45 nos.) on 07.09.2016.

Assistant Directors (3 nos.) from MoEF & CC, New Delhi on 14.09.2016 and 15.09.2016.

Dr (Mrs.). Anandi Subramanian, Sr. Economic Advisor, MoEF & CC, New Delhi on 16.09.2016.

Students of Rungia College, Rungia Kamrup District, Assam (30 nos.) on 17.09.2016.

Students of St. Elizabeth Girls High School (67 nos.) on 20.09.2016.



Photo: AJCBIBG

Dr. A. Pramanik explaining about the Great Banyan tree to the Asst. Directors (Trainee), MoEF & CC, New Delhi during their visit to AJCBIBG, Howrah

Publication

Panda, S.P., Singh, B.K. Subudi, H.N. and Patra, H.K. 2016. The Genus *Acanthus* L. (Acanthaceae) in Bhitarkanika National Park, Kendrapara District of Odisha, India. *Zoos Print* 31(8): 9–11.

– Dr. A. Pramanik
Scientist 'E' & HoO

CENTRAL NATIONAL HERBARIUM, HOWRAH

One day field survey trip to Amboli ghat (Maharashtra) from Donapaula (Goa) was conducted by Dr. Pushpa Kumari, Scientist 'D' on 25.09.2016 during tour to Goa for 26th Biennial AABE Conference held at Goa International Centre from 20th to 24th September 2016. Survey of the bamboo species occurring in the area was done and two species in flowering were collected.

Herbarium specimen identification

Dr. V.P. Prasad, Scientist 'D' corrected the identity of 3 specimens of *Fimbristylis* housed in CAL.

Dr. O.N. Maurya, Scientist 'C' identified 6 field numbers collected from Vikramshila Gangetic Dolphin Wildlife Sanctuary, Bhagalpur, Bihar.

Sri P.P. Ghoshal, Botanist identified 5 species collected from Betla National Park, Latehar, Jharkhand.

Herbarium specimens digitized

A total of 395 specimens scanned by Sri Amar Mondal and Sri S.C. Maikap.

Scanning of general specimens started from the family Ranunculaceae and 80 specimens have been scanned so far.

Sri Anand Kumar entered data of 67 species of *Epilobium* of Sikkim in Excel sheet.

Public service rendered

Dr. P. Kumari reviewed one manuscript received from *Bangladesh Journal of Plant Taxonomy*.

Dr. S. Bandyopadhyay, Scientist 'B' provided PDF of 2 pages from Spleenworts (*Asplenium* –Pteridophyta) of South India by Azeez, K., Kurup V.V.G. and Madhusoodanan P.V. (2008), to Dr. K.N. Gandhi, Harvard University and 4 pages of *Crudia* (Leguminosae: Caesalpinioideae), a new Generic Record for India with a New Species of the Genus, from *Kew Bull.* 49(3): 565–568 to Dr. M. Sanjappa, former Director, BSI.

Dr. S. Bandyopadhyay reviewed one manuscript received from Editor, In-Charge, *Rheedeia*.

Dr. Bandyopadhyay also provided information regarding an author of plant name [Dr. D.N. Guha Bakshi] for incorporation in the Author Query database of IPNI.

Dr. Avishek Bhattacharjee, Scientist 'B' sent images of 4 type-specimens of *Didymocarpus mertonii* to Dr. K. Narayanan Nair, Senior Principal Scientist, CSIR National Botanical Research Institute, Lucknow.

Dr. Bhattacharjee facilitated Dr. Subir Dey (JNU) in preparing brochures, selecting Hooker's specimens from CAL, planning of display for the above mentioned exhibition during his visits to CAL.

Dr. P. Kumari identified 12 specimens of bamboos collected by the RKMV University research fellow from East Midnapore, West Bengal.

CNH officials identified 15 plant specimens: 1 specimen by Dr. R. Gogoi; 2 specimens by Dr. Sangita Dey; 2 specimens by Dr. Mahua Pal; 1 specimen by Sri Anant Kumar; 3 specimens by Sri Gopal Krishna; 1 specimen by Sri Vijay Mastakar and 4 specimens by Sri Shyam Biswa, which came from: Bengal Institute of Pharmaceutical Sciences, Kalyani, W.B.; P.G. Department of Botany, Yuvaraja College, Karnataka; Gayatri College of Pharmacy, Sambalpur, Odisha; Agricultural & Ecological Research Unit Indian Statistical Institute, West Bengal; NSHM, Knowledge Campus, Kolkata; Department of Dravyaguna, (Pharmacology), IPGAE, Kolkata, Bharat Technology, Howrah, WB.

Meetings/conference attended

Dr. P.V. Prasanna, HoO & Scientist 'F' attended one day workshop on "Challenging Issues of participatory Biodiversity Conservation of the mangroves and sustainable livelihood", jointly organized by Indian Institute of Bio-Social Research and Development and Botanical Survey of India on 10.09.2016 at IBRAD, Kolkata.

Dr. Pushpa Kumari attended 26th Biennial International Conference of Asian Association for Biological Education, held at International Centre Goa from 20th to 24th September 2016.



Photo: B.K. Singh

Dr. P.V. Prasanna interacting with the participants in workshop at IBRAD, Kolkata

Hindi Diwas Samaroha

At Central National Herbarium "Hindi-Diwas" was celebrated on 19.09.2016. It was celebrated through various competitions and prize distribution. Four competitions viz., *Vad-vivad*, *Nibandh lakhen*, *Tippan & tankan* and *Prashnotri* were held in the committee room of CNH building. All the competitions were judged by Dr. A. Pramanik, Scientist 'E' & HoO, AJCBIBG and Dr. Devendra Singh, Scientist 'C'. Er. A.K. Pathak, Scientist 'G' & *Rajbhasha Adhikari*, BSI, Dr. P.M. Padhye, Scientist 'F' & HoO, BSI, Sri Sanjeev Kumar, Hindi Officer, BSI were present as Chief-Guest, Special Guest and Guest respectively.



Photo: Amar Mondal

Hindi-Diwas observed at Central National Herbarium, Howrah on 19.09.2016

Visitors/students

Sri A.K. Rastogi from CCU on 01.09.2016.

Dr. Subir Dey, Research Associate, University of Sussex on 06.09.2016.

3 Assistant Secretaries (trainee), MoEF & CC, New Delhi on 14.09.2016.

Dr. (Mrs.) Anandi Subramanian, Senior Economic Advisor, MoEF & CC, New Delhi and 3 senior officials; Sri Ajay Dahiya, MOEF & CC; Dr. Khurajam Jiban Kumar Singh, from NBRI, Lucknow; 59 Students of Botany Hons. (2nd and 3rd year) from Garhbeta College, Midnapur; 32 students of 2nd year Botany honours from Vidyasagar College for Women, Kolkata on 16.09.2016.

Mrs. Thoiba Kottekkatty, Research scholar, Dept. of Botany, University of Calicut, Kerala on 20.09.2016.

11 Students from A.P. department, Calcutta Madrasah on 22.09.2016.

35 Students of M.Sc. Biotech from St. Xavier's College, Kolkata on 23.09.2016.

50 Students of class XI and XII from Netaji Shikshaytan School, Agarpara; 35 students from Don Bosco College, Manipur on 27.09.16.

Sri Ajay Narayan Jha, Secretary, MOEF & CC on 30.09.2016 and released ENVIS Newsletter vol. 20(1).

Publications

Gogoi, R. and Arisdason, W. 2016. *Impatiens nicolsoniana*, a new name for *Impatiens mannii* C.B. Clarke ex Hook.f. (Balsaminaceae). *Phytotaxa* 273 (2): 144–146

Gogoi, R., Adamowski, W., Sherpa, N. and Chhetri, G. 2016. On the taxonomic identity and lectotypification of *Impatiens uncipectala* C.B. Clarke ex Hook.f. *Phytotaxa* 273 (3): 207–211.

Kambale, S.S., Gholave, A.R., Bhattacharjee, A. and Yadav, S.R. 2016. Typifications and validations of taxa in the genus *Decalepis*: An economically and ethnobotanically important genus of Gymnanthereae (Apocynaceae: Periplocoideae). *Taxon* 65(4): 875–877.

Karthigeyan, K. and Jayanthi, J. 2016. *Popowia arfakensis*, a new name for *P. parvifolia* Scheff. (Annonaceae). *Phytotaxa* 273(3): 212.

Biswa, S., Lakshminarasimhan, P., Lokho, A. Krihna, G. and Kumar, A. 2016. New locality for *Malva parviflora* var. *microcarpa* (Pers.) Loscos (Malvaceae). *Indian J. Forestry* 39(2): 197–199.

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

VISIT OF SRI AJAY NARAYAN JHA, SECRETARY, MOEF & CC TO BSI, HOWRAH



CENTRAL BOTANICAL LABORATORY, HOWRAH

Dr. Harish Singh, Scientist 'D' & HoO, Dr. Pankaj Arvind Dhole and Sri R. Saravanan, Bot. Asstt. conducted an ethnobotanical field tour Nuapada district, Odisha from 12th to 26th September 2016. A total of 368 field numbers (in duplicate) were collected with 516 ethnobotanical information. Eight ethnobotanically important exhibits procured for incorporating to CBL museum. One live ethnobotanically important plant collected for pergola garden. Dr. K.A. Sujana Scientist 'D' and Sri R. Saravanan collected secondary data on 40 endemic trees of Western Ghats with their ethnobotanical and economical uses. Ms. Monika Mishra, Bot. Asst. investigated chromosome numbers of *Cleome rutidosperma* ($2n=30$).



Photo: CBL



Blepharispermum subsessile (Asteraceae) – root, stem and leaves are used in the treatment of rheumatism

Officials engaged in the collection of ethnobotanical sample at Jamalipadar, Nuapada district, Odisha

Herbarium specimens identified

Dr. Sujana identified 70 plant specimens collected from Malkangiri district, Odisha. Sri A.C. Halder, Botanist and Sri P. Baske, Botanist identified 30 plant specimens collected from Baudh district, Odisha. Ms. Sagari Chaudhury, Senior Project Fellow identified 10 plant specimens.

Meeting attended

Dr. H. Singh, Monika Mishra, K.A. Sujana, P.A. Dhole, R. Saravanan attended quarterly meeting of *Hindi Karyanayan Samiti* on 29.09.2016.

Public service rendered

Dr. K.A. Sujana, reviewed an article for *Taiwania* - International Journal of Life Sciences.

Visitors/students

25 students and one teacher from M.E. School, Bargachia, Howrah and 11 students and two Teacher from A.P. Dept. Calcutta Madrasha, Kolkata (W.B.) visited ethnobotanical museum, CBL Howrah.

Publication

Rawat, D.S., Rana, C.S., Singh, H. and Karnatak, M. 2016. *Gentiana saginoides* Burkill (Magnoliopsida: Gentianales: Gentianaceae) rediscovered from Sunderdhunga valley in Uttarakhand 155 years after description: Notes on its population status. *J. Threatened Taxa* 8(7): 9048–9052.

Singh, H. and Saravanan, R. 2016. Wild Edible Plants and their Method of Preparation and Mode of Consumption in Tribal Areas of Odisha, India. In: Trivedi, P.C. (ed.) *Medicinal Plants and Raw Drugs of Tribals*, Pointer Publishers, Jaipur. Pp. 44–102.

– Dr. Harish Singh
Scientist 'D' & HoO

INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

The botanical paintings by Roxburgh are being interpreted with updated nomenclature. Under this project three species *Morus indica*, *Morus alba*, *Morus mauritiana* of the family Moraceae were studied and interpretation continued.

Database of herbarium specimens

As a part of preparation of database of herbarium specimens at BSIS, 89 nos. of Dicot and 147 nos. of Monocot herbarium specimens were listed and documented.

Nomenclature Update of digitized herbarium specimens at BSIS

143 nos. of Digitized Herbarium specimens were updated with valid botanical names, basionyms/synonyms.



Photo: ISIM

Sri A.K. Rastogi, Chief Engineer, CCU, MoEF & CC
visiting the Botanical Gallery at ISIM



Assistant Secretaries of MoEF&CC viewing
Dye collections at ISIM, Kolkata



Photo: ISIM

ISIM officials participating in Hindi competitions
during *Hindi Pakhwada* celebration



The Review Committee Meeting held at
Committee Room, ISIM, Kolkata

Programme attended/conducted

The Review Committee (RC) meeting was held in ISIM, Kolkata on 01.09.2016 under the chairmanship of Mr. A.K. Rastogi, Chief Engineer, CCU, MoEF & CC, New Delhi. The Committee members visited the site for an observation of ongoing civil and electrical work undertaken by NBCC in Ground floor, 1st floor, 2nd floor and 3rd floor of ISIM building. Dr. P. Singh, Director, BSI discussed about various issues and status of the BSI/ZSI Projects under renovation and restoration, assisted by the Scientists and members of Monitoring Committee (MC). New gallery set-up at 3rd floor of ISIM building and two days Seminar-preparatory meeting with CWEH, University of Sussex, U.K. officials at ISIM was held on 08.09.2016. A visit was made by Assistant Secretaries (Trainee) of MoEF & CC (Ms. Vishwasree, IAS; Sri Ravinder Singh, IAS and Sri Ajay Dahiya, IAS) followed by a meeting with BSI officials at ISIM on 14.09.2016. Arrangement made for *Hindi Pakhwada* celebration held during 14th to 28th September 2016; Hindi competition events conducted on 15.09.2016 and prize distribution event on 22.09.2016. Arrangements were made for the Exhibition and Seminar on "J.D. Hooker: Botanical trailblazer and the botanical Heritage of India" (scheduled on 1st & 2nd October 2016) from 26th to 30th September 2016.

– Dr. Manas Bhaumik
Scientist 'D' & HoO

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Dr. Lal Ji Singh, Scientist 'D' & HoO consulted the herbarium at Central National Herbarium and the library from 2nd to 4th September 2016.

Dr. T.A.M. Jagadeesh Ram, Scientist 'D' identified 66 specimens of Pannariaceae into 7 species .

Digitization of herbarium specimens

936 herbarium specimens of the family Acanthaceae, Caesalpiniaceae, Thunbergiaceae and Verbenaceae were scanned.

Hindi Pakhwada 2016

Organized *Hindi Pakhwada* (fortnight) celebration from 1st to 15th September 2016. Various competitions for Hindi and non-Hindi categories were conducted to mark the celebration.



Hindi pakhwada celebration at ANRC, Port Blair



Two-day Hindi workshop at ANRC, Port Blair

Hindi workshop

Two days Hindi workshop was organized at main office, as well as in Dhannikhari Experimental Garden cum Arboretum (DEGA), Nayashahar on 27.09.2016 and 28.09.2016.

Operation and Maintenance inspection

Operation and Maintenance (O and M) inspection of this regional centre was carried out by Sri P.J. Michel, Under Secretary and Sri J.S. Kanth, Section officer, IWS Unit of Minister of Environment, Forest and Climate Change, New Delhi from 29th September to 1st October 2016.



O and M Inspection team, MoEF & CC, New Delhi at Museum, ANRC, PortBlair



O and M Inspection team, MoEF & CC, New Delhi at DEGA, Nayasahar, South Andaman

Meetings/programmes attended

Dr. Lal Ji Singh and Dr. Jagadeesh Ram attended a Training Programme on "Service Matters" at Institute of Government Accounts and Finance, Kolkata from 5th to 9th September 2016.

Dr. Singh participated State Medicinal Plants Board advisory committee meeting on 'Research & Working Plan' at Office of the Chief Conservator of Forests, Port Blair on 16.09.2016.

Dr. Singh acted as Chairperson of the selection committee for the recruitment of Junior Research Fellow (JRF) for the project entitled, "Herbal Garden of Andaman & Nicobar Islands", funded by NMPB, Govt. of India, Ministry of AYUSH, New Delhi, on 16.09.2016.

Dr. Singh attended the inauguration ceremony of Fish Landing Centre, Guptapara, inaugurated by Prof. Jagdish Mukhi, Hon'ble Lt. Governor A & N Islands on 20.09.2016.

Publication

Singh L.J., Kholia, B.S., Kumar, B., Joshi, P., Sharma, S. and Ebihara, A. 2016. Notes on occurrence and distribution of some filmy ferns in Andaman and Nicobar Islands, India. *Keanean J. Science* (5): 61–68.

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

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Dr. Manish Kandwal, Scientist 'D' conducted a field tour to Lohit and Anjaw districts of Arunachal Pradesh from 27th August to 16th September 2016 in connection with 'Grass Flora of Arunachal Pradesh'.

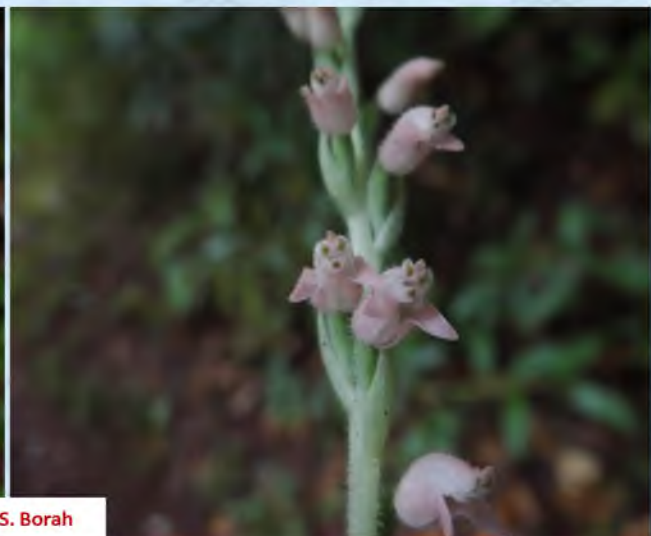
Dr. Umesh Kumar L. Tiwari, Scientist 'B' conducted a field tour to East Kameng District, Arunachal Pradesh in connection with 'Flora of East Kameng District, Arunachal Pradesh' from 17th to 29th September 2016 and collected specimens of 300 field nos.

Dr. S. Borah, Botanist also toured along with Dr. Kandwal to Lohit and Anjaw districts of Arunachal Pradesh from 27th August to 16th September 2016 and collected 152 field nos. in connection with 'Flora of Lohit District and Flora of Kamlang WLS, Arunachal Pradesh'.



Photo: S. Borah

Goodyera repens (Orchidaceae)



Goodyera schlechtendaliana (Orchidaceae)

Herbarium specimen identification

Dr. P. Satyanarayana, Scientist 'D' & HoO and Sri B.B.T. Tham, Botanist made descriptions for 54 species in connection with 'Flora of Pakhui Tiger Reserve and Wild Life Sanctuary'.

Dr. Vineet Kumar Rawat, Scientist 'D' made descriptions for 8 species in connection with 'Taxonomic study of the family Polypodiaceae of North East India'.

Dr. Krishna Chowlu, Scientist 'B' made entry in herbarium sheets for 41 species in connection with 'Red listing of orchids of Arunachal Pradesh as per IUCN criteria'.

Hindi saptah celebration

Hindi saptah was organized and various competitions were held from 14th to 21st September 2016.

Meeting/training attended

Dr. Satyanarayana attended a meeting of the technical committee for protected areas in SFRI on 14.09.2016 at the office of PCCF (WL and BD), Itanagar.

Dr. Rawat and Dr. Tiwari attended five days training programme on official matters at INGAF, Kolkata from 5th to 9th September 2016.

– Dr. P. Satyanarayana
Scientist 'D' & HoO

ARID ZONE REGIONAL CENTRE, JODHPUR

In connection with Flora of Shoolpaneshwar WLS, Narmada District, Gujarat, Dr. S.L. Meena, Scientist 'D' and Dr. Harikrishna Peddi, Bot. Asst. conducted one field tour from 1st to 14th September 2016 and collected 117 field numbers and 15 plant saplings for *ex-situ* conservation.

Dr. M.K. Singhadiya, Botanist and Sri Ravi Prasad, Bot. Asst. conducted a field tour from 18th September to 2nd October 2016 in connection with Flora of Sariksa Tiger Reserve, Alwar District, Rajasthan.

Sri Vinod Maina, Scientist 'D' & HoO, Dr. Ramesh Kumar, Scientist 'C' and Dr. C.S. Purohit, Scientist 'B' conducted exploration to Machiya Biological Park, Jodhpur from 8th to 11th and 13th September 2016 (5 days) and collected specimens of 279 field numbers.



Photo: P. Harikrishna

Andrographis echioides (Acanthaceae) in flowering at Botanic Garden, AZRC, Jodhpur



Citrus sp. (Rutaceae) in fruiting at Pomological section at Botanic Garden, AZRC, Jodhpur



Photo: P. Harikrishna

Gloriosa superba (Liliaceae) in blooms at Shoolpaneshwar WLS, Narmada district, Gujarat



Punica granatum (Punicaceae) in fruiting at Pomological section at Botanic Garden, AZRC, Jodhpur

Herbarium specimen identification

Specimens of 173 field numbers were identified during this month. For Ethnobotany of Dang District, Gujarat, Sri Vinod Maina and Sri Ravi Prasad identified specimens of 30 field numbers. For Flora of Shoolpaneshwar WLS, Narmada District, Gujarat, Dr. S.L. Meena and Dr. Harikrishna Peddi identified specimens of 63 field numbers. For Flora of Todagarh-Raoli WLS, Rajasthan, Dr. C.S. Purohit, identified specimens of 28 field numbers. For Flora of Sariksa Tiger Reserve, Alwar District, Rajasthan, Dr. M.K. Singhadiya and Sri Ravi Prasad identified specimens of 15 field numbers.

Plant conservation

Following plant saplings were introduced in the Experimental Garden of AZRC, Jodhpur (collected from Shoolpaneshwar WLS):

Rare and Threatened plants: *Firmiana colorata*, *Butea superba*, *Sterculia villosa*, *Ensete superbum* and *Dendrobium microbulbon*.

Medicinal plants: *Gymnema sylvestre*, *Crinum lorifolium* and *Dioscorea bulbifera*

Economically important plants: *Acacia concinna*, *Sterculia foetida*, *Pterocarpus marsupium* and *Casuarina equisetifolia*.

Phenological data on flowering and fruiting of 40 introduced plants species at Desert Botanic garden of AZRC were recorded.

Hindi saptah celebration

At this regional centre *Hindi saptah* observed from 9th to 16th September 2016. Conducted and organized various competitions like poetry, instant speech, typing test and essay writing and distributed prizes to the winners on the concluding day. Further, one day workshop on official language (Hindi) was organized on 16.09.2016. On this occasion, Dr. Praveen Gehlot, Associate Prof., JNVU, Jodhpur delivered a talk on utility of the Hindi language in research and higher education. On the concluding day invited dignitaries namely Dr. Bhavendra Shard Jain, Secretary, Gandhi Shanthi Pratishthan Kendra, Jodhpur; Dr. Padmaja, Secretary, Inter regional literature Council, Jodhpur; Dr. Govind Singh Panwar, Retd. Prof., Govt. College, Port Blair, Andaman and Nicobar Islands and Dr. Praveen Gehlot, Associate Prof., Dept. of Botany, Jai Narain Vyas University, Jodhpur chaired the concluding session.



Photo: Ravi Prasad

Celebration of Hindi Saptah at AZRC, Jodhpur

Meetings/programme attended

Dr. S.L. Meena attended a meeting on finalization of Forest working plans of different districts, Gujarat organized by Gujarat Forest Department on 02.09.2016 at Aranya Bhavan, Gandhinagar, Gujarat.

Dr. M.K. Singhadiya and Sri Bhawru Bux MTS (Cash) attended a training programme on Service Matters from 5th to 9th September 2016 organised by Institute of Government Accounts & Finance, Ministry of Finance, Regional Training Centre at Kolkata.

AZRC is awarded with third prize for display of exhibits and providing fruitful information about the plant wealth to the visitors during one day *Kisan Mela* organised by Central Arid Zone Research Institute (ICAR), Jodhpur on 21.09.2016. The AZRC officials, Sri Ramesh Kumar, Scientist 'C', Dr. C.S. Purohit, Scientist 'B', Dr. P. Harikrishna, Bot. Asst., Sri J.P. Yadav Sr. Lib. Asst. and were present in the stall.



Photo: P. Harikrishna

AZRC participation in Kisan Mela organised by ICAR

Visitors/students

Sri Surendra Kumar, Research scholar, JNVU, Jodhpur visited library on 06.09.2016.

Three officers and 76 Foresters (trainees) of Rajasthan Forest Department visited herbarium, museum, botanical garden and library on 12.09.2016.

Dr. Praveen Gehlot, Associate Professor, Dept. of Botany, JNVU, Jodhpur; Dr. Bhavesh Sarad Jain, Sec. Gandhi Shanti Pratisthan, Jodhpur; Dr. Padmaja Sharma, Secretary, Inter regional literature Council, Jodhpur and Dr. Govind Singh Panwar, Retd. Prof. (Hindi), Govt. College, Port Blair, Andaman and Nicobar Islands visited library on 12.09.2016 and 16.09.2016.

– Sri Vinod Maina
Scientist 'D' & HoO

CENTRAL REGIONAL CENTRE, ALLAHABAD

An exploration tour in connection with the ongoing project, 'Floristic diversity of Kishanpur Wildlife Sanctuary, Lakhimpur Kheri, U.P.', was undertaken from 21st to 29th September 2016 by a four member tour party led by Dr. Neelam K. Gautam, Scientist 'B'. During the tour 225 field numbers of specimens were collected and about 125 field photographs were taken.



Photo: CRC



A view of mixed forest Kishanpur Wildlife Sanctuary

A view of Jhadi Tal at Kishanpur Wildlife Sanctuary

Dr. Pooja Gupta, SPF, also accompanied the party in field tour to Kishanpur WLS 21st to 29th September 2016 in connection with the project 'Lichens of Terai regions of Uttar Pradesh' and collected specimens of 56 field packets.

Herbarium identification

A total of 326 species under 693 specimens for the project, 'Flora of Chhattisgarh' Vol. I.; six species under 15 specimens for 'Flora of Parvati Aranga Wildlife Sanctuary and adjacent Tikri forest area, Gonda, U.P.' and seven species for 18 specimens for 'Flora of Chandraprabha Wildlife Sanctuary, Chandauli, U.P.' were identified.

In addition, 49 earlier collected specimens housed at BSA were also identified.

Under the projects, 'Taxonomic studies on lichenised non Thelotrema Indian Graphidaceae' and 'Lichens of Rajasthan, Kutch and Gujarat' a total of six species under 32 specimens were identified.

Taxonomic descriptions of six species for Flora of Parvati Aranga Wildlife Sanctuary and adjacent Tikri forest area, Gonda, U.P.; 12 species for 'Flora of Chhattisgarh' Vol. I and 30 species for 'Flora of Chhattisgarh' Vol. II were made.

Public service rendered

Sri Vineet Kumar Singh authenticated two plant specimens received from Ms. Mandavi Tiwar and Raksha Mishra, Shambhunath Institute of Pharmacy, Jhalwa, Allahabad.

Dr. Nitisha Srivastava, Bot. Asst. authenticated 11 species (22 specimens) and Sri Vineet Kumar Singh authenticated 21 species (38 specimens) received from Prof. M.L. Naik, National Centre for Natural Resources, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh.

Dr. G.P. Sinha, Scientist 'E' & HoO adjudicated a Ph.D. thesis of Calcutta University and evaluated a lichen paper for the journal *Taiwania*.

Dr. Nitisha Srivastava reviewed a manuscript for *Journal of Agricultural Crop Research*.

Celebration of Hindi week

Hindi week was celebrated from 14th to 21st September 2016. Five programmes viz., Essay writing, *Hindi Samanya Gyan*, *Prashnottari*, Debate and Computer typing competitions were organized and prizes were distributed for the participants during closing ceremony.

Seminar attended

Dr. A.N. Shukla, Scientist 'B' attended and presented a paper entitled 'Flora of Cold Desert – Dicotyledons' in National Seminar on 'Plant Identification and Conservation' held at TRS Govt. P.G. College, Rewa from 24th to 25th September 2016.

Publications

Garg, A., Singh P. and Garg, K. 2016. World's tenth largest banyan tree at Narora in Upper Ganga Ramsar site, Uttar Pradesh, India. *Curr. Sci.* 111(5): 778–779.

Tiwari A.P., Gavade S. and Lekhak M. 2016. Lectotypification of *Ischaemum molle* (Andropogoneae, Poaceae). *Phytotaxa* 272(3): 228–230.

Tiwari A.P., Sikarwar R.L.S., Khanna K.K. and Dubey P.C. 2016. *Cressa* L. (Convolvulaceae)-a new generic record for flora of Madhya Pradesh. *Keanean J. Sci.* 5: 45–48

Tiwari A.P. and Sikarwar R.L.S. 2016. *Jaiv Vividhata ka Khajana: Panchmadhi. Vigyan Pragati* 9: 36–38.

Verma A.K., Dhawan S.S., Singh S., Bharati K.A., Jyotsana. 2016. Genetic and chemical profiling of *Gymnema sylvestre* accessions from central India: Its implication for quality control and therapeutic potential of plant. *Phcog. Mag.* 12: 407–413.

– Dr. G.P. Sinha
Scientist 'E' & HoO



Photo: CRC

Essay competition during celebration of Hindi Week

DECCAN REGIONAL CENTRE, HYDERABAD

Dr. G. Swarnalatha, Bot. Asst. conducted one field tour to Paralakhemundi Forest Division, Odisha from 6th to 15th September 2016 and collected 200 lichen specimens. Dr. K. Prasad, PDF conducted a field tour to Tamil Nadu (Nilgiri hills) and Karnataka (Pushpagiri, Hassan; Mhadevi Wildlife Sanctuary, Belagavi) from 12th to 23rd September 2016 and collected specimens of 10 field numbers.

Herbarium specimen identification

Sri S. Nagaraju, Bot. Asst. identified eight field numbers for 'Flora of Seshachalam Biosphere Reserve'; Dr. J. Swamy, Bot. Asst.

identified 25 field numbers for 'Flora of Sacred Groves of Andhra Pradesh' as well as 21 unidentified/wrongly identified specimens from 'Flora of Greater Hyderabad' collections; Sri K. Chandra Mohan, SPF identified 23 specimens for 'Flora of Satkosia Tiger Reserve, Odisha'.

Dr. L. Rasingam, Scientist 'C' & HoO documented 16 species for 'Flora of Nagarjunasagar – Srisailem Wildlife Sanctuary'; Mrs. P.S. Annamma, SPF prepared descriptions for 10 species collected from 'Kawal Tiger Reserve, Telangana'.

Photo: G. Swarnalatha



View of Mahendragiri hills, Odisha

Digitization of herbarium specimens

In connection with the digitization of specimens at BSID, 200 specimens belonging to 24 genera of following families Amaranthaceae, Polygonaceae, Podostemaceae, Aristolochiaceae, Piperaceae, Lauraceae, Rubiaceae and Hernandiaceae were scanned and also completed data entry of label information work of scanned specimens.

Public service rendered

Dr. J. Swamy identified specimens for Sri Sandeep Gavade and Swaroop Singh Gaiwad, Research Scholars, Shivaji University, Kolhapur, Maharashtra; D. Anil Kumar, Research Scholar, Department of Botany and Microbiology, Acharya Nagarjuna University, Guntur, Andhra Pradesh; R. Meghana Sandhya, Koringa College of Pharmacy, Korangi, Tallarevu, Andhra Pradesh. Dr. Swamy also assisted in collection of some medicinal plants from Rajendranagar forests area for Dr. Vandana Singh, Scientist and Mrs. Anita, Research fellow, National Institute of Nutrition (NIN), Hyderabad and assisted in herbarium consultation to Mrs. Janeesha, Research Scholar, Department of Botany, University of Calicut, Thenhipalam, Kerala.

Hindi Diwas Samaroh

Hindi Diwas Samaroh was observed on 22.09.2016 at DRC, Hyderabad.

Meetings/programmes attended

Dr. L. Rasingam attended Telangana State Biodiversity Board meeting on 21.09.2016, DPC meeting at Institute of Forest Biodiversity, Dhulapally on 23.09.2016 and Research Advisory Committee meeting at Institute of Forest Biodiversity (IFB), Dhulapally on 30.09.2016. Sri Nagaraju attended training programme on Application of Remote Sensing and GIS in Forest Resource Assessment held at Forest Research Institute (FRI), Dehradun from 2nd to 12th September 2016.

Publications

Chandramohan, K., Prasanna, P.V. and Ramachandra Reddy, P. 2016. Note on the distribution of *Lophopogon kingii* Hook. f. (Poaceae), an endemic grass from Eastern Ghats. *Int. J. Adv. Res. Sci. Technol.* 5(2): 604–605.

Chandramohan, K., Swamy, J. and Naidu, M.T. 2016. Notes on taxonomy and distribution of *Desmodium zonatum* (Leguminosae: Papilionoideae) in Peninsular India. *Rheedea* 26(1): 26–28.

Chorgha, A.R., Dey, S., Halder, S. and Prasanna, P.V. 2016. Proposal to conserve the name *Andropogon caricosus* (*Dichanthium caricosum*) (Poaceae) with a conserved type. *Taxon* 65(4): 885–886.

Rasingam, L., Swamy, J., Sankara Rao, M. and Nagaraju, S. 2016. Three new additions to the flora of United Andhra Pradesh. *Indian For.* 142(8): 445–447.

– Dr. L. Rasingam
Scientist 'C' & HoO



Hindi Diwas Samaroh observed at DRC, Hyderabad on 22nd September 2016

EASTERN REGIONAL CENTRE, SHILLONG

During the period one local tour was conducted on 28.09.2016 to Mawsynram forest areas – Mairang, Barapani and Mawsynram for collection of plant litter by Dr. Ashish Venkatesh Prabhugaonkar, Scientist 'B' and live plants for planting in the Experimental Botanical Garden (EBG), Barapani by Dr. M. Murugesan, Scientist 'B' and Sri L.R. Meitei, Bot. Asst. and planted 102 plants in total.

During this period identified 25 species from 'Flora of Eastern Nagaland' by Dr. N. Odyuo, Scientist 'D' and Dr. R. Daimary, Bot. Asst.; 'Flora of West and South-West Khasi hills district with reference to the sacred groves' by Dr. Chaya Deori, Scientist 'D' and Sri S.R. Talukdar, Bot. Asst.; described 17 species from 'Flora of Yangoupokpi Lokchao WLS (Manipur)' by Dr. A.A. Mao, Scientist 'F' & HoO and Sri R. Meitei; from 'Flora of Eastern Nagaland' by Dr. N. Odyuo and Dr. R. Daimary. Taxonomic description completed for one species for Bryoflora of Mizoram and studied literature pertaining to *Riccia* and Identification of species of *Riccia* is being continued by Dr. S.K. Singh, Scientist 'D' for 'Taxonomic Revision of genus *Riccia* (Marchantiophyta) in India'.

Molecular sequence of ITS and LSU region of *Trichoglossum khasianum* was received from RFDF, RGCG, Thiruvananthapuram. Fungal herbarium specimens and slides were deposited by Dr. Ashish Venkatesh Prabhugaonkar in 'Herbarium Cryptogamae Indiae Orientalis' (HCIO), Division of Plant pathology, IARI, New Delhi. Accession numbers obtained are *Pseudotorula goaensis* (Type) HCIO 52050, *Pseudocercosporidium subramanianii* (Type) HCIO 52049 and *Trichoglossum khasianum* (Type) HCIO 52051.

Dr. M. Murugesan and Sri L.R. Meitei observed and recorded phenological data of flowering and fruiting of 23 plant species for *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.

For Micro-propagation of RET Plants of Northeast India by Dr. A.A. Mao and L. Ibemhal Chanu, Bot. Asst., subcultured *Armadorum senapatianum*, *Cymbidium tigrinum* and callus of *Rhododendron coxianum*. Reading of asymbiotic seed germination in MS medium with 0.2% charcoal + 10% coconut, 10% banana, 0.2% charcoal and control of *Cymbidium tigrinum* (Orchidaceae) in interval were taken. Lab to land transfer of *Cymbidium elegans* (about 250 plants) in greenhouse were made. Trial experiment for multiple shoot for *Armadorum senapatianum* were also conducted. Mulching, weeding of *Cymbidium tigrinum*, *Armadorum senapatianum* and others in greenhouse were made. Data analyze, interpretation, literature survey for *Armadorum senapatianum* were also made.

For Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of selected species by Dr. Deepu Vijayan, Scientist 'B', subcultured *in vitro* raised multiple shoots of *Pyrenaria khasiana* on woody plant medium supplemented with different plant growth hormones. Subcultured *Paris polyphylla* on ½ strength MS containing 0.2% activated charcoal with different concentrations of plant growth regulators. Rooting experiment continued for *Pyrenaria khasiana* on Woody Plant Medium supplemented with different concentrations of auxins. Transferred 33 nos. of *in vitro* raised saplings of *Pyrenaria khasiana* to green house for acclimatization. DNA isolation of Zingiber, Dendrobium (Manipur) and *Pyrenaria cherrapunjeana* and agarose gel electrophoresis of the DNA samples were done and the extracted DNA was quantified on 0.8% agarose gel and documented.

Public service rendered

Identified 82 samples of specimens received from various institutions.

Hindi Pakwada celebration

Hindi Pakwada was celebrated from 12th to 25th September 2016. Essay writing, Reading and Quiz competition was held amongst the officers and staff and prizes were distributed to the winners as well as to the participants.

Meetings/trainings attended

Dr. S.K. Singh attended a training programme organized by Indian Institute Public Administration, New Delhi from 29th August to 2nd September 2016 on 'Knowledge Management & Knowledge sharing in Organization'.

Dr. A.A. Mao attended Meghalaya State Biodiversity Board meeting on 19.09.2016.

Ms. R.K. Nilasana Singha, SRF attended hands on training “Application of Open Source Geospatial tools in ENM and widening the utilization of Niche model for Conservation of Threatened Plants” organized by Centre for Advanced studies in Botany, NEHU, Shillong from 21st to 23rd September 2016.

Dr. Mao attended Doctoral Committee Meeting, Martin Luther Christian University, Shillong on 22.09.2016.

Visitors/students

One Professor, 10 research scholar, 43 students and eight other visitors from various Institutions, Colleges and Universities visited the Centre.

Publications

Chaudhary, K.L. and Singh, S.K. 2016. Notes on Occurrence of *Adiantum flabellulatum* L. – a less known fern from Meghalaya. *Keanean J. Sci.* 5: 57–60.

Odyuo, N., Roy, D.K. and Daimary, R. 2016. Notes on two less Known *Molineria* recently collected from Northeast India. *Keanean J. Sci.* 5: 33–40.

Prabhugaonkar, A. and Singh, S.K. 2016. A disjunct bird nest fungus *Cyathus gayanus* newly recorded from Asia. *Keanean J. Sci.* 5: 13–16.

Singh, S.K., Murugesan, M. and Mao, A.A. 2016. A new species of *Crepidium* (Orchidaceae) from Meghalaya, Northeast India. *Keanean J. Sci.* 5: 9–12.

Singh, S.K. and Kumar, S. 2016. Two new and noteworthy records of Lejeuneaceae (Marchantiophyta) Jharkhand, India. *Keanean J. Sci.* 5: 25–32.

Talukdar, S.R. and Deori, C. 2016. Biodiversity potential of the wetlands of Laokhowa Wildlife Sanctuary, Assam, India. *NeBio* 7(3): 82–92.

– Dr. A.A. Mao
Scientist 'F' & HoO

NORTHERN REGIONAL CENTRE, DEHRADUN

Dr. R. Manikandan, Scientist 'D' conducted one herbarium consultation to tour to Regional Research Centre for Ayurveda, Ranikhet (RKT), Herbarium of Kumaon University, Nainital (HKU), from 28th August to 2nd September 2016.

Herbarium specimens identified

Identified total 67 species and made descriptions for 74 species of plants under the projects on 'Flora of Uttarakhand', Vol. V; 'Floristic Diversity and Phytosociological study of Simbalbara National Park'; 'Flora of Nandhour Wildlife Sanctuary'; 'Flora of Sonanadi Wildlife Sanctuary'; 'Flora of Sechu-Tuan Nala Wildlife Sanctuary, Himachal Pradesh'; 'Trees of Dehradun city and its vicinity'; 'Revision of family Cyatheaceae and genus *Adiantum* in India'.



Photo: Puneet Kumar

A view of vegetation of Sechu Tuan Nalla WLS, Chamba

Aconitum heterophyllum (Ranunculaceae)

Hindi Pakhwara/Hindi Karyasala Celebration

Hindi Pakhwara was celebrated from 14th to 28th September 2016. On this occasion several Hindi related competitions viz., Extemporaneous speech, General Hindi, Essay writing, and *Prashnottari* were organized. Officials of NRC, Dehradun attended *Hindi Karyasala* on 28.09.2016. Sri B.P. Uniyal delivered a lecture on “*Karyalayee karyo me Hindi ka saraltam upyog*”.



Photo: Devraj Agarwal

Hindi Pakwada celebration at NRC



Photo: P.K. Deroliya

Staff member participating in essay writing competition

Public service rendered

Assisted Sri Showkat Aziem, Ph. D. Research scholar, H.N.B. Garhwal Univ., Srinagar in identification of 10 plant specimens/photos collected from Uttarkashi, Uttarakhand.

Assisted Sri Kaiser, Ph. D. Research scholar, H.N.B. Garhwal University, Srinagar in identification of 32 plant specimens collected from Uttarkashi.

Meeting/training attended/ interview conducted

Dr. S.K. Srivastava, Scientist 'E' & HoO convened quarterly meeting of Official Language Implementation Committee on 29.09.2016 and reviewed the correspondence done during this quarter.

Conducted an interview on NHMS project for the post of Research Associate, Junior Project Fellow and Field Assistant on 06.09.2016 at NRC, Dehradun.

Dr. Giriraj Singh Panwar, Scientist 'C' and Sri Rahul Kumar Singh, LDC attended 5 days C-DDOs Training programme on “Service Matter” at Indian Institute of Government Accounts and Finance, Regional Training Centre, Kolkata held from 5th to 9th September 2016.

Visitors/students

24 students from Unison World School, Mussoorie, 25 students of M.Sc. 1st year of Department of Botany, Dolphin (PG) Institute of Biomedical and Natural Sciences Dehradun and 35 students from B.Sc. Honors of Banaras Hindu University, Varanasi visited the regional centre.

Photo: Devraj Agarwal



Students of Unison World School, Mussoorie visiting Museum



M.Sc. students from Dolphin (PG) Institute of Biomedical and Natural Sciences visiting herbarium



B.Sc. Honours students from BHU, Varanasi are explained about Plant propagation methodology

Publications

Singh, C., Kumar, B., Joshi, P. and Sahni, S. 2016. Diversity of Ferns in Dehradun, Uttarakhand. *Res. J. Life Sci., Bioinform., Pharm. and Chem. Sci.* 2(2): 98–113.

Panwar, G.S., Srivastava, A. and Srivastava, S.K. 2016. Micropropagation of *Pittosporum eriocarpum* Royle – an endangered and endemic medicinal tree of North-West Himalaya. *Indian For.* 142(8): 769–773.

Pusalkar, P.K., Srivastava, S.K. and Kumar, B. 2016. *Veronica anagalooides* Guss. – A new record for Indian flora. *Ann. Forest.* 23: 41–44.

Verma, D., Lavania, S. and Gogoi, R. 2016. Recollection and lectotypification of *Impatiens racemulosa* Wall. ex Hook.f. & Thomson (Balsaminaceae) from Meghalaya, North-east India. *Webbia: J. Plant Taxon. Geogr.* <http://dx.doi.org/10.1080/00837792.2016.1224694>.

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

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

Dr. Dinesh Kumar Agrawala, Scientist 'C' & HoO identified 49 Orchid species for the project, 'Red listing of Orchids of Eastern Himalaya as per IUCN criteria' and 100 specimens were finalized in respect of their identity, label data, finding geo-coordinates and entering in the excel sheet.

Dr. David Lalsama Biata, Scientist 'B' identified Nine Onagraceae species and digitally illustrated 11 species for the project, 'Flora of Sikkim – Family Onagraceae'.

Sri S.K. Rai, Bot. Asst. identified 24 species from 48 unidentified herbarium sheets.

Sri Subash Pradhan, Field man identified six species from 12 unidentified herbarium sheets.

Digitisation of herbarium specimens

670 herbarium sheets were scanned and meta data of 770 sheets belonging to Hypericaceae, Malvaceae and Bombaceae were entered into Excel -worksheet.

Public Service rendered

Dr. D.K. Agrawala attended GB Pant Himalayan Environment & Development (GBPIHED), Sikkim Unit, Pangthang as a member of interview board for selection of NMHS project staff on 05.09.2016.

Dr. D.K. Agrawala attended the workshop on "Development of United Nations Development programme (UNDP)/ Global Environment Facility (GEF) project on securing livelihoods, conservation, sustainable use and restoration of high range Himalayan ecosystems" organised by Forest Environment & Wild life Management Department (FEWMD), Government of Sikkim at Mangan, North Sikkim on 08.09.2016.

Dr. D.K. Agrawala attended the foundation day cum 3rd popular lecture series of GB Pant Himalayan Environment & Development (GBPIHED) and delivered a lecture on "Orchids-as the indicator of climate change" at Gangtok on 10.09.2016.

Hindi Pakwada

Organised *Hindi Pakwada* programme at Sikkim Himalayan Regional Centre (SHRC) during 13th to 27th September 2016 for the implementation of Official Language policy.

Training attended

Dr. David. L. Biata and Sri Indra Tuti, O.S. have participated five days DDO Training on "Service Matters", at INGAF-Regional Training Centre, Kolkata from 5th to 9th September 2016.

Visitors/students

Dr T.S. Rana & Dr. K.N. Nair, Principal Scientists and Sri Kantha Raj, Research Scholar, from National Botanical Research institute (NBRI) visited this centre for herbarium consultation on 29.08.2016.



Photo: SHRC

Hindi Pakwada celebrations at SHRC, Gangtok



NBRI scientific officials consulting herbarium at SHRC

Students from Kerala consulting herbarium at SHRC

Three M.Sc. students from Sikkim University visited this centre for herbarium consultation on 31.08.2016. Ms. Renu, research scholar, Delhi University visited this center for herbarium consultation on 02. 09.2016. Sri Pawan Kumar and Sri Devendra Singh Meena, Research scholars, Delhi University visited this center for herbarium consultation on 06.09.2016 and 08.09.2016. Sri R.K. Sonkar, Govt. Degree college, Hardoi; H.R. Yadav, Govt. Degree college, Bhadohi and Dr. M.Z. Shaikh, RFNS Science College, Akkalkuwa visited this center to see the herbarium arrangement on 12.09.2016. Sri Prashob and Dr. K.A. Anil Kumar, research scholars, St. Joseph College, Devagiri, Calicut visited this center for herbarium consultation on 16.09.2016.

Publication

Agrawala, D.K., Sharief, M.U. and Singh, B.K. 2016. *Bulbophyllum paramjitii* (Orchidaceae: Epidendroideae: Malaxideae): a new species from Sikkim Himalaya, India. *Phytotaxa* 273(1): 72–76.

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

SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. M. Palanisamy, Scientist 'D' and Sri S.K. Yadav, Bot. Asst. conducted a field tour to Karnataka coastal areas from 23rd August to 3rd September 2016 and collected 289 field numbers (in duplicate) of seaweed specimens and preserved 43 field numbers of live specimens in liquid form. They also identified 20 field numbers of seaweeds. Dr. C. Murugan, Scientist 'D' and S. Arumugam, Bot. Asst. proceeded on a field tour to Meghamalai WLS, Tamil Nadu from 23rd September 2016. Dr. S. Kaliamoorthy, Scientist 'D' and Dr. M.Y. Kamble, Scientist 'D' undertaken a field tour to Silent Valley National Park from 20th to 24th September 2016 and collected 30 field numbers of orchids.

Herbarium specimen identification

Dr. K.A.A. Kabeer, Scientist, 'D' and Sri A. Ravi Kiran, Bot. Asst. identified specimens of four field numbers from the previous collection in connection with Kodaikanal WLS, Tamil Nadu.



Photo: M. Palanisamy

Dominant growth of green seaweeds at Talgodi coast

*Enteromorpha compressa* (Seaweed)

Photo: M. Palanisamy

Chaetomorpha spiralis (Seaweed)*Hypnea musciformis* (Seaweed)

Ex-situ conservation

Dr. S. Kaliamoorthy and his team introduced 39 plants belonging to 11 species of orchids and 4 of *Piper excelsum*, which is endemic to New Zealand, at the National Orchidarium and Experimental Garden (NOEG), Yercaud. They also multiplied 24 plants of endemic and ornamental orchids, 45 other plants, repotted *Goodyera procera* and *Coelogyne fimbriata* and developed 11 seedlings, 9 cuttings and transplanted 11 sample of *Barleria*. In addition, the team also recorded the phenological data of 32 species including 22 orchids and 10 other angiosperms.

Digitisation of herbarium specimens

A total of 33,173 herbarium sheets were pasted with barcodes.

Scanning Electron Microscopy (SEM)

Dr. G.V.S. Murthy, Scientist 'G' & HoO dissected the flowers and collected pollinia of 7 species of orchids for SEM study and also captured 6 images of nutlets of four species of *Cyperus*. Dr. J.V. Sudhakar, Bot. Asst. examined the achenes of four species of *Ficus* and captured 5 images of the same.

Public service rendered

As a part of collaboration with Tamil Nadu Agricultural University (TNAU), Coimbatore, the inaugural class on the 'Plant Taxonomy and Biosystematics' for PG students of the Dept. of Plant Genetic Resources was conducted by Dr. G.V.S. Murthy on 23 September 2016. Sri S.K. Yadav delivered lecture on the overview of BSI and its functions in relation to plant taxonomy. Dr. J.V. Sudhakar delivered a lecture on the uses of Taxonomic literature- Flora and Manuals on 30.09.2016.

During this month, a total of 39 plants including 6 seaweeds were identified for research scholars and students from various institutions.

Dr. J.H. Franklin Benjamin, Scientist 'B' provided information on the list of RET/Endemic plants to Dr. S. Muthukrishnan and distributional data of *Aenhenrya rotundifolia* and *Cheirostylis flabellata* to Sri Ahamed Sherif, Research Scholar, Bharathidasan University, Tiruchirappalli.

Mr. Rakesh G. Vadhyar, Bot. Asst. delivered lecture on BSI, Museum and MH collections and Types to 12 PG students of St. Teresa's College, Ernakulam on 08.09.2016.



Photo: SRC
SRC officials participating in Hindi Essay competition



Photo: SRC
Family members of SRC officials participating in Hindi competition at SRC office, Coimbatore

Hindi Day Celebration

The regional centre celebrated Hindi fortnight from 1st to 14th September 2016 and organized various competitions for the officials and family members (including children) of SRC. The prizes and certificate distributions ceremony was held on 14.09.2016.

The Quarterly Meeting of Official Language Implementation Committee was held at SRC, Coimbatore on 22.09.2016.

Meetings/programmes attended/conducted

Dr. M. Palanisamy and Dr. C. Murugan attended Training Programme on *Service Matter* at the Regional Training Centre, Institute of Government Accounts and Finance, Kolkata from 5th to 9th September 2016.

Dr. J.V. Sudhakar, attended the "Hands-on Training on Analysis of DNA Marker Data" held at Institute of Forest Genetics and Tree Breeding (ICFRE-IFGTB), Coimbatore from 19th to 24th September 2016.

Sri S. Arumugam presented and defended the thesis titled "A taxonomic study on the Subtribe Sporobolinae Benth. (Tribe: Eragrostideae Stapf) in India" (Research Supervisor: Dr. G.V.S. Murthy) on 19.09.2016.



Photo: SRC
Hands-on Training on Analysis of DNA Marker Data at ICFRE-IFGTB, Coimbatore

Visitors/students

Dr. M. Sanjappa, former Director, BSI visited the herbarium and consulted the endemic legumes of India between 21st to 27th September 2016.

A total of 29 students / research scholars and 14 scientific personnel from various institutions visited the museum, herbarium and library of this centre, whilst 551 persons in 72 parties visited the NOEG, Yercaud.

Publications

Gosavi, K.V.C., Chandore, A.N., Kamble, M.Y. and Yadav, S.R. 2016. A new species of *Dimeria* (Poaceae) from Andaman and Nicobar Islands, India. *Phytotaxa* 270(4): 295–300.

Singh, R.K. and Garg, A. 2016. Call for conservation of the critically endangered saffron balsam of Karnataka - *Impatiens raziana* Bhaskar & Razi (Balsaminaceae). *Indian For.* 142(8): 803–805.

Sudhakar, J.V. and Murthy, G.V.S. 2016. Identity of two south Indian closely allied endemic species *Ficus amplocarpa* & *F. guttata* (Moraceae) and their conservation status. *Rheedea* 26(1): 69–73.

– Dr. G.V.S. Murthy
Scientist 'G' & HoO

WESTERN REGIONAL CENTRE, PUNE

Dr. J.S. Jalal, Scientist 'D' conducted an exploration tour for the project, 'An Assessment of Orchid diversity of Central Western Ghats' and collected the orchids from Netravali Wildlife Sanctuary, Cotigaon Wildlife Sanctuary and adjoining areas. Sri S.C. Patil, Bot. Asst. conducted one tour for the project, 'Flora of Pushpagiri Wildlife Sanctuary' and documented the angiosperm flora. Dr. R. Dubey, Scientist 'D' conducted one fungal collection tour for the project, 'Taxonomic Studies of Microfungi of Sanjay Gandhi National Park along with its 10% peripheral area'. Sri D. Jesubalan, Bot. Asst. proceeded for fern collection tour for the project, 'Pteridophytic flora of Pushpagiri Wildlife Sanctuary, Karnataka with 10% periphery'. Sri D. Tripathi, SPF conducted a fern collection tour for the project "Pteridophyte flora of Kudremukh National Park with 10% periphery area".



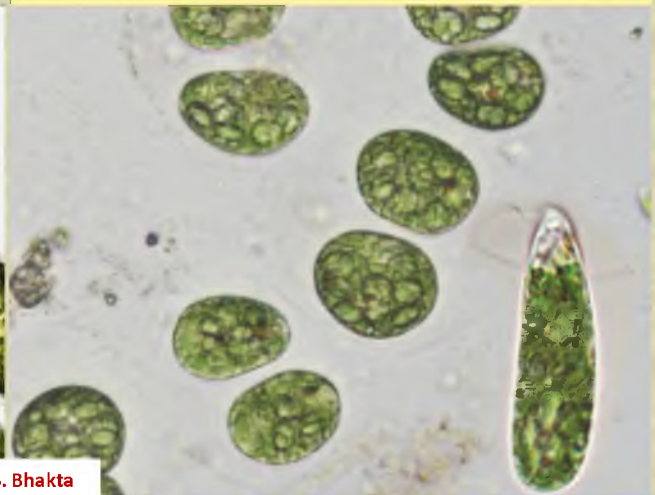
Photo: J.S. Jalal

Pecteilis gigantea (Orchidaceae) in Netravali WLS



Photo: S. Bhakta

Cladophora glomerata (Algae)



Euglena clara (Algae)

Specimen identification

Dr. J. Jayanthi, Scientist 'D', Dr. P. Ingle, Scientist 'B' and Dr. C.R. Jadhav, Botanist identified 73 angiosperm species under the projects, 'Flora of Biligirirangaswamy Temple Wildlife Sanctuary, Karnataka', 'Floristic Diversity of Wan Wildlife Sanctuary, Maharashtra' and 'Floristic survey of Someshwara Wildlife Sanctuary, Karnataka'. Dr. A. Benniamin, Scientist 'D' identified six pteridophyte species under the project, 'Ferns of Karnataka'. Dr. S. Bhakta, Bot. Asst. studied the diversity of algal samples in the campus of WRC and taken microphotography. Smt. S. Shreya, SPF identified eleven microfungi under the project, 'Microfungi of BRT Wildlife Sanctuary, Karnataka'.

Public service rendered

Dr. P. Lakshminarasimhan, Scientist 'E' & HoO reviewed one manuscript for the *Journal of Threatened Taxa*. Dr. J. Jayanthi reviewed one manuscript for the journal *Phytotaxonomy*. During this month identification and authentication certificates were issued to 16 students from B. Pharm, M. Pharm. colleges, Ph.D. and P.G. students from different institutions.

Meetings/conference/programmes attended

Dr. P. Lakshminarasimhan and Dr. J.S. Jalal attended the sponsored training programme on “Service Matter” held at Institute of Government Accounts and Finance, Regional Training Centre, Kolkata from 5th to 9th September 2016.

Dr. A. Benniamin attended 4th BoG Meeting of the State forestry training society at chambers of Secretary Forest Mantralaya, Mumbai on 14.09.2016.

Dr. S. Bhakta has participated and presented poster on ‘Saltpans of eastern suburbs of Mumbai - A niche for cyanobacterial diversity’ in an International conference on ‘Microalgal and Cyanobacterial Biotechnology-MACB 2016’ held during 29th August to 1st September 2016 at National Facility for Marine Cyanobacteria, Bharathidashan University, Trichy.

Hindi Saptah celebration

At WRC *Hindi Saptah* was organized from 12th to 19th September 2016, during which Sri Jeet Singh, CCF(T), Pune Forest Department, Mrs. A. Chauhan, Director, Income Tax Department, Pune, Mrs. Seema Deshpande and Sri R. Verma from Hindi Shikshan, Pune, Sri Sunil Limaye, CCF (WL), Pune Forest Department were invited guests on different days and events.



Photo: A.D. Pandey

Celebration of Hindi Saptah in WRC

Visitors/students

Prof. Stefan Poremboski, from University of Rostock, Germany visited WRC museum on 06.09.2016.

Dr. Veena Chandra, Emeritus Scientist, NRC, BSI visited WRC for herbarium consultation of Cyperaceae family during the period 17th to 25th September 2016.



Photo: S. Bhakta

Dr. Stefan Poremboski, University of Rostock, Germany at WRC, Pune

An architect student, Sri Arjun Nambiar, Bharati Vidyapeeth Deemed University, Pune visited WRC for his project on understanding architecture of scientific institutes.

Dr. Anuradha Upadhye, Head, Botany Division and two research associates from Agharkar Research Institute, Pune visited WRC for herbarium consultation.

Publications

Shreya, S. and Dubey, R. 2016. *Colemaniella biligiriense* sp. nov. – a new hyphomycetous fungus from Western Ghats of India. *Curr. Res. Environ. & Appl. Mycol. (CREAM)* 6(3): 197–201.

Dubey, R. 2016. Diversity of Microfungi of North Western Ghats. *Indian J. Forestry* 39(2): 137–145.

Lakshminarasimhan, P. and Kumar, A. 2016. Distributional note on *Fernandoa adenophylla* (Wall. ex G. Don) Steenis (Bignoniaceae). *Indian J. Forestry* 39(2): 173–174.

Jayanthi, J., Jalal, J.S. and Lakshminarasimhan, P. 2016. Wild Grasses and Legumes of the Great Indian Bustard Wildlife Sanctuary, Maharashtra. *Ela J. Forestry & Wildlife* 5(2): 183–191.

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

PLANT OF THE MONTH



Pachira insignis (Sw.) Savigny (MALVACEAE) known as Guiana Chestnut. It is an evergreen or semi-deciduous tree with a dense, rounded crown. It is an ornamental tree in tropical regions.

By Dr. B.K. Singh



Dr. Paramjit Singh, Director, Botanical Survey of India welcome Sri Ajay Narayan Jha, Secretary, Ministry of Environment, Forest and Climate Change at Central National Herbarium, Howrah

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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