



BSI NEWSLETTER

The monthly electronic newsletter of Botanical Survey of India

Director's column

The scientists of BSI described a new ginger species, *Zingiber pseudosquarrosus* from Andaman & Nicobar Islands and two new reports, *Eleocharis spiralis* and *Courtoisina cyperoides* from these islands. Similarly, the scientists also described two new species of *Hellenia* from NE India, *H. meghalayensis* and *H. paramjitii* and one *Pedicularis* species, *P. artiae* from Sikkim Himalayas. On the other hand, the species, *Calligonum comosum* was recorded as new to India from Indian desert. In the Lichens, one new generic record and three new species records to India were made, whilst in Fungi, a new species of anamorphic fungus, *Tripospermum melghatensis* from Maharashtra was described.

Tours were conducted during this month by the scientific officials of different regional centres and units to various parts of India in connection with their allotted projects. To collect macrofungal specimens, a tour was conducted to Sikkim Himalayas; to collect orchid specimens, tours were conducted to Arunachal Pradesh; to study general floristic composition, tours were conducted to Todgarh-Raoli WLS, Rajasthan; Navsari Dist., Gujarat; Khasi hills, Meghalaya; Kawal Tiger Reserve, Telangana and Meghamalai WLS and Kodaikanal WLS, Tamil Nadu.

The 70th Independence Day was celebrated in all the regional centres and units of BSI by hoisting National Flag and planting of saplings.

Jai Hind!

Paramjit Singh
Director, Botanical Survey of India, Kolkata



HEAD QUARTERS, KOLKATA

A tour to South and East districts of Sikkim was undertaken from 13th to 27th August 2016 to collect macrofungal specimens by Dr. Kanad Das, Scientist 'D'. During this tour Rabongla, Damthang, Tendong, Tinkitam, Kewzing, Maenam Wild Life Sanctuary, Namchi, Jorethang, Gangtok, Churten, Kyangnosla, Tamje were surveyed. About 70 field nos. belonging to 60 species were collected.

In connection with the ongoing projects on 'Studies on wild mushrooms of Sikkim', 'Studies on the macrofungi of AJCBIBG', 'Wood rotting fungi of Rajmahal hills', 'Revision of the family Metzgeriaceae in India' and 'Liverworts and Hornworts Flora of Darjeeling District, West Bengal' the scientists and scientific staff identified, made descriptions and illustrations.

Besides, Dr. Devendra Singh, Scientist 'C' Identified 11 specimens belonging to seven species of liverworts and mosses collected from Larsemann Hills, East Antarctica and unidentified specimens deposited in CAL herbarium.

Dr. Monalisa Dey, Scientist 'B' studied and photographed the following specimens obtained on loan from New York Botanical Garden, Bronx, U.S.A.: *Lejeunea thwaitesiana* - NY1059466 (Isotype), *L. thwaitesiana* - NY1059467 (Lectotype), *L. thwaitesiana* - NY1059468, *L. vesiculosa* - NY1093938 (Holotype).

In connection with the project on "Pharmacognosy of Indian Cycads", Dr. A.B.D. Selvam, Scientist 'D' completed anatomical studies on the leaflets of *Cycas beddomei*.

Sri Arvind Parihar, Bot. Asst. accessioned and incorporated holotype material received from Dr. T.K. Arun Kumar, Asst. Professor, The Zamorins Guruvayurappan College, Kozhikode, Kerala - *Hyalocladosporiella cannae* - Holotype (Accession No. - CAL 1342).

Meetings/training attended

Meeting on "National Digital Library (NDL) Project" (An NME-ICT project, MHRD, Govt. of India) was held on 13.08.2016 at IIT Kharagpur Kolkata Extension Center. Er. A. K. Pathak, Scientist 'G' and Dr. Kumar Avinash Bharati, Scientist 'B' also attended the meeting along with Director, BSI.

Field training to research students

Dr. Kanad Das provided field training to BSI research personnel under the NMHS funded project,

"Biodiversity Assessment through Long-Term Monitoring Plots in Himalayan Landscape" on 06.08.2016.

Dr. Monalisa Dey also imparted practical training on field collection methodologies and preservation techniques of bryophytes to the BSI research personnel under the NMHS funded project, "Biodiversity Assessment through Long-Term Monitoring plots in Indian Himalayan Landscape" on 06.08.2016.

Public service rendered

Dr. A.B.D. Selvam authenticated a plant sample received from M/s Imami Limited, Kolkata as Bark of *Cinnamomum verum* (Lauraceae).

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

Publication

Selvam, A.B.D. 2016. Trans-anatomy: A new Botanical Term. *World J. Pharm. Pharm. Sci.* 5(9): 1539–1546.



Photo: A. Bharati

Dr. Paramjit Singh, Director, BSI at meeting on National Digital Library (NDL) Project with NDL officials

AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

Special drive is being taken for de-weeding and cleaning of different divisions and vantage points in the botanical garden. The Great Banyan tree developed eight new prop roots and were encaged in bamboo cages. 15 encaged aerial roots were repaired and new support was provided to heavy branches (6 places).

Garden maintenance/management

Regular maintenance of the plant saplings collected during different tours.

Dr. M.U. Sharief, Scientist 'E' maintained live orchid plants by watering regularly and maintained the Orchidarium.

70th Independence Day Celebration

70th Independence Day was celebrated on 15th August, 2016 by hoisting the national flag by the Director, Botanical Survey of India at Curator Office Lawn, AJCBIBG, Howrah. The Director, BSI planted a *Myristica malabarica* sapling in the Division No. 21 of the garden.



Photo: AJCBIBG

Director, BSI addressing during the Independence Day celebration and planting *Myristica malabarica* sapling

Public service rendered

The saplings of *Artabotrys uncinatus*, *Brownea hybrida*, *Delonix regia*, *Lagerstroemia thorelii*, *Licula grandis*, *Mimusops elengi*, *Peltophorum pterocarpum*, *Polyalthia longifolia*, *Putranjiva roxburghii*, *Saraca asoca*, *Tabebuia chrysantha* etc. were distributed to the Thanamakhua Model High School, South End Hospital, Howrah, and Karunamayee Vidyapeetha, Howrah for Plantation.

An injured turtle rescued from Domjur stadium area was released in the lake of AJCBIBG for rehabilitation.



Photo: AJCBIBG

Injured turtle rescued from Domjur stadium area released in the lake of AJCBIBG for rehabilitation

Meetings/training attended

Dr. B.K. Singh acted as resource person in one day training programme in NMHS funded project, "Biodiversity Assessment through long term monitoring plots in Indian Himalayan Landscape" on 06.08.2016.

Dr. B.K. Singh attended a meeting with Chairman, IBRAD, Salt Lake and Director, BSI to discuss the collaborative project on Sunderban mangroves in the Committee Room, CNH on 03. 08.2016.

Zoological Survey of India conducted a one day infield training programme for their research scholars and scientists in the botanic garden on 06.08.2016.



Photo: AJCBIBG

Dr. S.K. Tyagi, Addl. Director, CPCB, MOEF & CC, New Delhi at AJCBIBG, Howrah



Sri Rajdev Prasad Yadav, DG, Dept. of Plant Resources, Ministry of Forest & Soil Conservation, Govt. of Nepal during his visit to AJCBIBG, Howrah

Visitors

Sri Rajdev Prasad Yadav, DG, Dept. of Plant Resources, Ministry of Forest & Soil Conservation, Govt. of Nepal and Prof. Hohan Siwakoti, Head, Central Dept. of Botany, Tribhuvan University, Nepal on 01.08.2016.

Dr. S.K. Tyagi, Addl. Director, Central Pollution Control Board (CPCB), MoEF & CC, New Delhi on 02.08.2016.

3 Scientists, West Bengal Pollution Control Board, Kolkata on 08.08.2016.

Sri. R.S. Srinivasa, Retd. Asst. Comm. of Police, Chennai along with 9 persons on 11.08.2016.

Dr. Vinita Damodaran, Director, Centre for World Environmental History, University of Sussex, Brighton on 20.08.2016.

– Dr. A. Pramanik
Scientist 'E' & HoO

CENTRAL NATIONAL HERBARIUM, HOWRAH

Dr. Avishek Bhattacharjee, Scientist 'B' has undertaken one field tour to West Kameng district of Arunachal Pradesh from 20th to 28th August 2016 in connection with the SERB-Young Scientist Project entitled 'Inventorization of Indian *Calanthe* (Orchidaceae) with focus on micromorphology of pollinia'.

Herbarium specimen identification

Dr. V.P. Prasad, Scientist 'D' identified 4 unidentified specimens of *Fimbristylis* housed in CAL.

Dr. Vinay Ranjan, Scientist 'D' identified 5 field numbers collected from Nawada & Aurangabad districts, Bihar.

Dr. O.N. Maurya, Scientist 'C' identified 5 field numbers collected from Vikramshila Gangetic Dolphin Wildlife Sanctuary, Bhagalpur, Bihar.

Dr. K. Karthigeyan, Scientist 'D' identified ca 90 herbarium specimens collected from Jaldapara National Park, Jalpaiguri, West Bengal. Dr. Karthigeyan also identified two species *Opilia amentacea* and *Celtis philippensis* based on the images received from Sri Sivaram, Deputy Conservator of Forests, Tirupati Devasthanam, Andhra Pradesh.

Sri Gopal Krishna, Bot. Asst. identified 10 field numbers collected from Nawada & Aurangabad districts, Bihar. Sri Vijay Mastakar, Bot. Asst. identified old herbarium sheets of *Cajanus cajan*, *Dalbergia stipulacea* and *Lathyrus sativus* of family Leguminosae in Hall 2.

Public service rendered

Dr. S. Bandyopadhyay, Scientist 'B' provided PDF of the protologue of *Lycopodium arunachalense* D.D. Pant & P.S. Pandey [*Phyta Monogr.* 3: 11-13, t. 3A, pl. 1A. 1985] to Dr. K.N. Gandhi., Harvard University, U.S.A.

Dr. A. Bhattacharjee sent two literature to Sri Aniket Sengupta, Doctoral Candidate of the Hileman Lab of Plant Evolution and Development, Department of Ecology and Evolutionary Biology, The University of Kansas, U.S.A.

Dr. Mahua Pal, Bot. Asst. identified 2 specimens of family Convolvulaceae sent by Seemanti Chatterjee, from Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata.

Scientific officials identified 28 plant specimens: 3 specimens by Dr. R. Gogoi; 3 specimens by Dr. K. Karthigeyan; 2 specimens by Dr. A. Bhattacharjee; 6 specimens by Sri Anant Kumar; 5 specimens by Sri Gopal Krishna; 2 specimens by Sri Vijay Mastakar and 7 specimens by Sri Shyam Biswa, which were received from: P.G. Department of Botany, Yuvaraja College, Karnataka; Department of Botany Vidyasagar University, Midnapore; Agricultural & Ecological Research Unit, Indian Statistical Institute, W.B.; Jadavpur University West Bengal; Department of Zoology, Rammohan college, W.B.; Department of Pharmaceutical Sciences, BIT Mesra, Ranchi.

Meetings attended

Dr. P.V. Prasanna, Scientist 'F' & HoO facilitated the visit of Prof. Mohan Siwakoti from Tribhuvan University, Nepal and Dr. R.P. Yadav from Ministry of Forests and Soil conservation, Govt. of Nepal during their interaction with Director, BSI at CNH.

Dr. Prasanna participated in a one day programme on 'Field orientation on Survey techniques' held at CNH in connection with MoEF & CC-GBPHIB Himalayan Biodiversity Project.

Dr. Prasanna attended 33rd meeting of West Bengal Biodiversity Board on 10.08.2016 at Salt Lake, Kolkata.

Dr. Kumar Avinash Bharati, Scientist 'B', CNH accompanied Director, BSI for the meeting on "National Digital Library (NDL) Project" (An NME-ICT project, MHRD, Govt. of India), held at IIT Kharagpur Kolkata Extension Center.

Dr. Vinay Ranjan attended meeting of Monitoring Committee of NBCC renovation work of ISIM building held on 24.08.2016 at ISIM.

Herbarium specimens digitized

One species of Calycanthaceae, 19 species of Magnoliaceae, six species of Schisandraceae, four species of Illiciaceae and one species of Tetracentraceae have been digitized for type section.

Visitors/students

5 students of B.Sc. Agriculture (Hons.) from College of Agriculture, Uttar Banga Krishi Viswavidyalaya, West Bengal on 02.08.2016.

Prof. Mohan Siwakoti from Tribhuvan University, Nepal and Dr. R.P. Yadav from Ministry of Forests and Soil Conservation, Government of Nepal on 02.08.2016.

Publications

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

Krishna, G., Majumdar, S., Bandyopadhyay, S. and Bhattacharjee, A. 2016. Publication of nomenclatural novelties. *Curr. Sci.* 111(3): 454.

Prasanna, P.V., Nagaraju, S. and Sankararao, M. 2016. Flowering plant diversity of Seshachalam Biosphere Reserve. *EPTRI Newsletter* Vol. 22(1): 2.

Väre, H. Gogoi, R. and Arisdason, W. 2016. Markku Häkkinen, 1946–2015. *Taxon* 65(4): 935–939.

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

CENTRAL BOTANICAL LABORATORY, HOWRAH

Dr. Harish Singh, Scientist 'D' & HoO and Dr. Dhole Pankaj Arvind, Bot. Asst. identified 24 plant species collected from Nuapada district, Odisha. Dr. K.A. Sujana, Scientist 'C', identified 149 plant species collected from Malkangiri district, Odisha. Sri A.C. Halder and Sri P. Baske, Botanists identified 24 plant species collected from Baudh district, Odisha. Dr. Sujana and Sri R. Saravanan Bot. Asst. collected secondary data on 28 endemic trees of Western Ghats with their ethnobotanical uses. Dr. (Ms.) Monika Mishra, Bot. Asst. counted chromosome number of *Canthium coromandelicum* ($2n = 44$).

Swachh Bharat Abhiyan

Dr. Harish Singh, Dr. Sujana, Dr. Dhole, Sri R. Saravanan and Dr. Monika Mishra attended de-weeding and cleaning activities at AJCB Indian Botanic Garden Howrah (near Wallich's Monument) on 25.08.2016 as a part of *Swachhata* Calendar of CBL for 2016-17.

Public service rendered

Dr. Harish Singh reviewed a manuscript for *Nelumbo*, and Dr. Sujana reviewed a manuscript for *International Journal of Biodiversity Conservation*.

Visitors/students

23 students and 2 Teachers from Banwarilal Bhalotia College, Asansol, West Bengal visited Ethno-botanical museum.

Two visitors from U.K. and one from Bangladesh also visited Ethno-botanical museum.



CBL officials de-weeding at AJCBIBG during *Swachh Bharat Abhiyan*

– 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 two species *Artocarpus integrifolia* and *A. hirsuta* of family Moraceae and one species *Eugenia inophylla* of family Myrtaceae were studied and interpreted.

Database of Herbarium Specimens

As a part of preparation of database of herbarium specimens at BSIS, 129 nos. of Dicot and 50 nos. of Monocot herbarium specimens were listed and documented.

Nomenclature Update of digitized Herbarium Specimens at BSIS

Digitized Herbarium specimens, 213 nos. were updated with valid botanical names, basionyms/synonyms.

Public Service rendered

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

Programme attended

Dr. M. Bhaumik, Scientist 'D' & HoO and Dr. A.K. Sahoo, Scientist 'D', ISIM participated in a meeting with CGM, NBCC and other officials of NBCC on ongoing renovation plan of work of ISIM building was held on 23.08.2016. The Monitoring committee meeting of the NBCC project related to renovation of ISIM building was arranged on 24.08.2016 at ISIM to discuss various important issues and review meeting by CCU, MoEF & CC on 01.09.2016. Mrs. Kangkan Pagag, Bot. Asst. and Sri B.C. Dey, Sri S.K. Sharma, Sr. Presv. Asst. assisted during the meeting.

– Dr. Manas Bhaumik
Scientist 'D' & HoO

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Dr. T.A.M. Jagadeesh Ram, Scientist-'D' identified 92 specimens of Porinaceae into 11 species.

Digitization of Herbarium Specimens

Herbarium details computerized in EXCEL format: 789 herbarium specimens belonging to the family Anacardiaceae, Connaraceae, Fabaceae and Moringaceae were fed in the computer in a prescribed format.

Public service rendered

Dr. Lal Ji Singh, Scientist 'D' & HoO, delivered a lecture on Diversity of Forest Flora in Andaman and Nicobar Islands for Andaman Nature Club, Andaman and Nicobar Islands organized by NCSTC-DST, Govt. of India, New Delhi at Govt. Model Sr. Secondary School, Port Blair on 20.08.2016.



Zingiber pseudosquarrosum - new species described based on collection from Sabari, Rangat, Middle Andaman

Photo: Lal Ji Singh

Meetings/programmes attended

Dr. Lal Ji Singh participated in the closing ceremony of 67th Van Mahotsav-2016 organized by Department of Environment and Forests, Andaman and Nicobar Administration at Tagore Government College of Education, Port Blair on 04.08.2016.

Dr. Singh participated Institutional Ethical Committee (IEC), Andaman and Nicobar Islands meeting at Directorate of Health Service (DHS), Port Blair on 08.08.2016.

Dr.T.A.M. Jagadeesh Ram, Scientist 'D', attended the Ph.D. viva-voce examination of Sri P. Karthick on the title '*Isolation and Characterization of Secondary metabolites from Epiphytic Bacteria associated with Seaweeds of Little Andaman (Andaman and Nicobar Islands)*' held at Department of Ocean Studies & Marine Biology, Pondicherry Central University, Port Blair on 08.08.2016.

Dr. Singh participated the celebration of International Day of the World's Indigenous Peoples at Anthropological Survey of India, Port Blair 09.08.2016

Dr. Singh attended special lecture on "Indigenous Peoples' Right to Education at Anthropological Survey of India, Port Blair 09.08.2016

Dr. Singh attended Andaman & Nicobar Islands Institute of Medical Sciences (ANIIMS) Foundation Stone Laying Ceremony at Corbyn's Cove Extension, South Andaman on 14.08.2016.

Dr. Singh hoisted National Flag at ANRC, BSI, Port Blair on 15.08.2015 and also attended Flag hoisting celebration at Netaji Subhas Chandra Bose Stadium, Port Blair on 15.08.2015.

Dr. Singh attended a Reception on Independence Day at Raj Niwas, Port Blair on 15.08.2015.

Dr. Singh participated in Research Advisory Committee (RAC) meeting at Office of the Principal Chief Conservator of Forests, Research & Working Plan, Van Sadan, Haddo, Port Blair on 17.08.2016



Photo: G.A. Ekka

Dr. Lal Ji Singh along with scientific officials hoisting National Flag at ANRC, Port Blair on Independence Day

Visitors/students

Ms. Nayiya Parveen and Ms. Anu, M. Sc., Plant Science, JNRM College, Port Blair visited library and herbarium on 01.08.2016.

Dr. G. Venkateswaran, Chief Scientist, Central Food Technology Research Institute, Mysore along with three members visited library and herbarium on 05.08.2016.

Sri S.K. Pandya, Govt. of Gujarat along with 3 members visited library and herbarium on 19.08.2016.

Sri Pradeep Kumar Pandey and Sri Nand Lal Tiwari from Pay and Account Office (BSI & ZSI) Kolkata visited Dhanikhari Experimental Garden and Arboretum (DEGA) on 21.08.2016.

4 teachers and 50 students of Khalsa Public School, Port Blair visited herbarium, library and garden (DEGA) on 22.08.2016.

6 students of JNRM College, Port Blair visited library on 23.08.2016.

Ms. Srelakshmi, Research Scholar, CUSAT, Kerala visited library on 23.08.2016.



Teaching staff and students of Khalsa Public School at Museum, ANRC, Port Blair



Teaching staff and students of Khalsa Public School, Port Blair at DEGA, Nayashahar

Publication

Singh, L.J. and Singh, P. 2016. *Zingiber pseudosquarrosus* sp. nov. (Zingiberaceae) from Andaman and Nicobar Islands, India. *Nordic J. Bot.* 34: 421–427.

Mishra, S., Vivek, C.P. and Singh, L.J. 2016. *Eleocharis spiralis* (Rottb.) Roem. & Schult. (Cyperaceae): An addition to the flora of Andaman and Nicobar Islands. *Trop. Pl. Res.* 3(2): 289–291.

Mishra, S., Vivek, C.P. and Singh, L.J. 2016. *Courtoisina cyperoides* (Roxb.) Sojak (Cyperaceae): A New Distributional Record for Andaman and Nicobar Islands, India. *Indian J. Forestry* 39(2): 159–160.

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

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Dr. Krishna Chowlu, Scientist 'B' conducted a field tour to West Kameng and Tawang Districts of Arunachal Pradesh from 20th August 2016 to 29th August 2016 and collected 50 live plants and 41 field numbers for herbarium in connection with 'Red listing of Orchids of Arunachal Pradesh as per IUCN criteria'.

Herbarium specimen identification

Dr. P. Satyanarayana, Scientist 'D' & HoO and Sri B.B.T. Tham, Botanist written descriptions for 42 species in connection with 'Flora of Pakhui Tiger Reserve and Wild Life Sanctuary'.

Dr. Vineet Kumar Rawat, Scientist 'C' written descriptions for 14 species in connection with 'Taxonomic study of the family Polypodiaceae of North East India'.

Dr. Umesh Kumar L. Tiwari, Scientist 'B' written descriptions for 21 species in connection with 'Flora of East Kameng District, Arunachal Pradesh'.

Dr. S. Borah, Botanist made descriptions for 26 species in connection with 'Flora of Lohit District and Flora of Kamlang WLS, Arunachal Pradesh'.



Anthogonium gracile (Orchidaceae)



Odontochilus lanceolatus (Orchidaceae)

Independence Day celebration

Independence Day was celebrated on 15.08.2016 at this regional centre by hoisting National Flag.

Public service rendered

Dr. Umesh Kumar L. Tiwari identified 16 species for Ms. Reetashree Bordoloi, JRF and another 16 species for Ms. Binita Medak, Research Scholar.

Visitors/students

Two Research Scholars from North Eastern Regional Institute of Science and Technology (NERIST), Itanagar visited this regional centre on 22.08.2016.

One Student from Dera Natang Govt. College, Itanagar visited on 12.08.2016 for herbarium consultation.

Meeting attended

Dr. Tiwari attended 7th Governing Body Meeting for Arunachal Pradesh State Medicinal Plant Board, Itanagar at PCCF office on 12.08.2016.



Satyrium nepalense (Orchidaceae)

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

ARID ZONE REGIONAL CENTRE, JODHPUR

In connection with Flora of Todgarh-Raoli WLS, Rajasthan, Dr. C.S. Purohit, Scientist 'B' conducted a field tour from 26th July to 16th August 2016 and collected 434 field numbers and 8 species of live plants for introduction in Desert Botanic Garden, AZRC, Jodhpur.

For Flora of Navsari District, Gujarat, Dr. Ramesh Kumar, Scientist 'C' and Sri Vinod Maina, Scientist 'D' & HoO conducted a field tour from 28th July to 14th August 2016 and collected 291 field numbers and 18 species of live plants for introduction in Desert Botanic Garden, AZRC, Jodhpur.



Photo: C.S. Purohit

Dalechampia scandens (Euphorbiaceae) collected from Todgarh-Raoli WLS, Rajasthan



Monsonia senegalensis (Geraniaceae) collected from Todgarh-Raoli WLS, Rajasthan

Herbarium specimen identification

Specimens of 130 field numbers were identified during this month. For Ethnobotany of Dang District, Gujarat, Sri Vinod Maina and Sri Ravi Prasad, Bot. Asst. identified specimens of 15 field numbers. For Flora of Shoolpaneshwar WLS, Narmada District, Gujarat, Dr. S.L. Meena, Scientist 'D' and Dr. Harikrishana Peddi, Bot. Asst. identified specimens of 100 field numbers. For Flora of Sariksa Tiger Reserve, Alwar District, Rajasthan, Dr. M.K. Singhadiya, Botanist and Sri Ravi Prasad, Bot. Asst. identified specimens of 15 field numbers.



Photo: Ramesh Kumar

Curculigo orchioides
(Hypoxidaceae)



Curcuma inodora
(Zingiberaceae)



Photo: Vinod Maina

Ensete superbum
(Musaceae)

Plant Conservation

Following plant saplings were introduced in the Experimental Garden of AZRC, Jodhpur (Collected from Navsari & Todgarh-Raoli WLS):

Rare and Threatened plants: *Curcuma inodora*, *Luffa acutangula* var. *amara*, *Nervilia discolor*, *N. aragoana* and *Tribulus rajasthanensis*.

Medicinal plants: *Abrus precatorius*, *Bombax ceiba*, *Butea monosperma*, *Centratherum anthelminticum*, *Curculigo orchioides*, *Gloriosa superba*, *Madhuca longifolia*, *Moringa oleifera*, *Pedaliium murex*, *Uraria picta* and *Urginea indica*.

Economically important plants: *Adenantha pavonina*, *Careya arborea*, *Cassia alata*, *Desmostachya bipinnata*, *Indigofera tinctoria*, *Lagenaria siceraria*, *Tephrosia villosa* and *Terminalia tomentosa*.

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



Photo: C.S. Purohit

Mimosa hamata
(Mimosaceae)



Photo: Vinod Maina

Oxystelma esculentum
(Apocynaceae)



Oxystelma secamone
(Apocynaceae)

Public service rendered

Identified three plant specimens for the research students.

Meeting attended

Dr. S.L. Meena attended a meeting regarding proposed Desert Biosphere Reserve chaired by CCF (WL) at Forest office, Jodhpur on 28.08.2016.

Visitors/students

Sri Roshan Kumar D. Parmar, Research Scholar, MS University of Baroda, Vadodra, Gujarat visited herbarium on 01.08.2016.

Sri Poona Ram, RFO, and other two officers and 72 newly recruited Foresters of Rajasthan Forest Dept., Jodhpur visited herbarium, museum, botanic garden and library on 12.08.2016.

Ms. Arti Soni and Ms. Anupama Sagar, Research Scholars of Jai Narain Vyas University, Dept. of Botany, Jodhpur visited this centre for plant identification on 06.08.2016.

Photo: AZRC



Boesenbergia parvula



Hellenia meghalayensis



Hellenia paramjitii



Zingiber stipitatum

Publications

Kumar, R., Singh, S.K., Sinha, B.K. and Sharma, S. 2016. Description of two new species of *Hellenia* (Costaceae) from North-east India. *Keanean J. Sci.* 5: 3–8.

Kumar, R. and Singh, S.K. 2016. Three new and noteworthy records of Gingers from India. *Keanean J. Sci.* 5: 17–24.

Purohit, C.S. and Kumar, R. 2016. *Ponerorchis puberula* – A little known rare orchid from Sikkim-Himalaya. *Keanean J. Sci.* 5: 49–52.

Purohit, C.S., Kumar, R. and Maina, V. 2016. *Calligonum comosum* L'Her. (Polygonaceae) – New record for India from Indian Desert. *Keanean J. Sci.* 5: 53–56.

– Sri Vinod Maina
Scientist 'D' & HoO

BOTANIC GARDEN OF INDIAN REPUBLIC, NOIDA

For implementation of Swacchta Calendar of BGIR for 2016-17, a temporary shed of 760 sq. ft erected adjacent to the Porta Cabin.

Spathoglottis plicata a terrestrial orchid found in tropical and subtropical Asia to the western Pacific region, flowered in Nursery No. 1 of the garden for the first time in August.



Photo: BGIR



Inauguration of the temporary shed (left); the temporary shed (right) at BGIR, NOIDA



Dr. Sheo Kumar hoisting National Flag at BGIR, Noida



Pigeons were released during Independence Day

Celebration of Independence Day

The 70th Independence Day was celebrated at BGIR by hoisting of National Flag. The 'symbol of peace' i.e. 'pigeons' were also released in the sky as a mark of peace and harmony.

Visitors/students

Total about 633 visited the garden, which includes 309 students, 12 teachers and 12 foreigners.

– Dr. Sheo Kumar
Scientist 'E' & HoO

CENTRAL REGIONAL CENTRE, ALLAHABAD

A total of 45 species under 61 specimens were identified under the project 'Flora of Chhattisgarh Vol. I.

Completed taxonomic description of eight species for the ongoing projects, 'Flora of Parvati Aranga Wildlife Sanctuary and adjacent Tikri forest area, Gonda, UP', 10 species under 'Flora of Chandraprabha Wildlife Sanctuary', 12 species Under 'Flora of Chhattisgarh Vol. I' and 35 species Under 'Flora of Chhattisgarh' Vol. II. In addition, 12 earlier collected specimens housed at BSA were also identified.

Senior Project Fellows under the Flora of India projects, 'Taxonomic studies on lichenised non Thelotremoid Indian Graphidaceae' and 'Lichens of Terai regions of Uttar Pradesh' identified 38 specimens in to 27 species.

Dr. Neelam Gautam, Scientist 'B' and Dr. Nitisha Srivastava, Bot. Asst. conducted SEM studies of leaf of *Santalum album* and leaf and seed surface of *Drypetes roxburghii*.

Dr. Ashutosh Verma, Scientist 'B' analyzed biochemical profile of *Gymnema sylvestre* accession and its result.

Public service rendered

Sri Vineet Kumar Singh and Dr. Nitisha Srivastava, Bot. Asstt. authenticated 12 species (24 specimens) and 17 species (34 specimens) respectively received from Prof. M.L. Naik, National Centre for Natural Resources, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh.

Dr. G.P. Sinha Scientist 'E' & HoO visited Barkatullah University, Life Science department to see the Herbarium facility etc. on 06.08.2016 during his visit to Bhopal.

Dr. G.P. Sinha and Dr. A.N. Shukla, Scientist 'B' reviewed one manuscript for the journal *Nelumbo* and two manuscripts for *Indian Forester* respectively.

Visitors/students

An educational tour party of BHMS 1st year students, Rajkiya Lal Bahadur Sashtri Homeopathic Medical College and Hospital, Phaphamau, Allahabad visited BSA herbarium and Garden of CRC, Allahabad. Dr. A.N. Shukla along with associates Sri V.K. Singh, Dr. Nitisha Srivastava and Dr. A.P. Tiwari attended the students and informed them about various activities of BSI.

Meeting attended

Dr. G.P. Sinha attended a meeting of Narmada Control Authority, Environment Sub Group organized at the behest of PCCF, M.P. State Wildlife Board at Bhopal on 06.08.2016.

Publications

Garg, A. 2016. Ethnomedicinal Plants Used for their Roots in the Nawabgunj Bird Sanctuary, Uttar Pradesh, India. *J. Non-Timber Forest Products* 23(2): 111–115.

Joseph, S., Sinha, G.P. and Jagadeesh, T.A.M. 2016. *Lithographa* Nyl. (Lichenized Ascomycota), a new generic record for India. *Indian J. Forest.* 39(2): 155–157.

Singh, P. and Singh, K.P. 2016. Three new records of lichens in the family graphidoid (Graphidaceae) for India. *Indian J. Forest.* 39(2): 147–149.



Photo: A.N. Shukla

Antigonon leptopus (Polygonaceae)



Photo: CRC

Visit of BHMS students to herbarium at CRC, Allahabad

– Dr. G.P. Sinha
Scientist 'E' & HoO

DECCAN REGIONAL CENTRE, HYDERABAD

Ms. P.S. Annamma, SPF, conducted one field tour to Jannaram and Belampalli Forest Divisions of Kawal Tiger Reserve, Adilabad district of Telangana from 28th July to 5th August 2016 and collected 20 field numbers. Dr. K. Prasad, RA, conducted field tour to Periyar Tiger Reserve & Silent Valley National Park and herbarium consultation tour to KFRI, Kerala from 28th July to 9th August 2016 and collected 11 field numbers.



Photo: K. Prasad



Photo: K. Chandramohan

Habenaria rariflora (Orchidaceae) [left]; *Kydia calycina* (Malvaceae) [right]

Herbarium specimen identifications

Dr. J. Swamy and Sri. S. Nagaraju, Bot. Asst. identified 28 field numbers in connection with the Seshachalam Biosphere Reserve; Dr. J. Swamy, identified 42 field numbers in connection with the Sacred Groves of Andhra Pradesh and also identified 12



Photo: P.S. Annamma



Photo: DRC

Homonoia intermedia (Euphorbiaceae) [left]; *Vanda tessellata* (Orchidaceae) [right]

unidentified/wrongly identified field numbers in connection with the Flora of Greater Hyderabad; Sri. K. Chandramohan, SPF identified 18 field numbers for Flora of Satkosia Tiger Reserve and Ms. P.S. Annamma, identified 10 field numbers for Flora of Kawal Tiger Reserve. Dr. L. Rasingam, Scientist 'C' documented 15 species in connection with the Flora of Nagarjunasagar –Srisailem Wildlife Sanctuary .

Digitization of herbarium specimens

In connection with digitization of herbarium specimens at BSID, 400 herbarium specimens of 23 genera from Lamiaceae and Nyctaginaceae were scanned and data entry of label information completed. About 150 scanned images were converted from TIFF to JPEG format.

Public service rendered

Dr. J. Swamy provided help to Sri Sandeep Gavade and Sri Swaroopsingh Gaikwad, Research scholars of Shivaji University, Kolhapur, Maharashtra on 01.08.2016.

Publication

Rasingam, L., Sankara Rao, M. and Nagaraju, S. 2016. Explorations and Documentation in Nagarjunasagar-Srisailem Wildlife Sanctuary (Tiger Reserve), India. *EPTRI-ENVIS Newsletter* 22(1): 4.

– Dr. L. Rasingam
Scientist 'C' & HoO

EASTERN REGIONAL CENTRE, SHILLONG

A field tour was undertaken for Flora of West and South-West Khasi hills districts by Dr. Chaya Deori, Scientist 'D' and Sri S.R. Talukdar, Bot. Asst. Three local field visits were conducted on 06.08.2016 to Mairang and nearby forest and collected various plants litter including *Calamus latifolius*; on 15.08.2016 to Barapani Experimental Botanical Garden, Umium, Ri-Bhoi, Umsning area and on 20.08.2016 to Mawsynram forest and collected plant litter.

Herbarium specimens identified

37 species identified for Flora of Eastern Nagaland by Dr. N. Odyuo, Scientist 'D' and Dr. R. Daimary, Bot. Asst.; 23 species described for flora of Yangoupokpi Lokchao WLS (Manipur) by Dr. A.A. Mao, Scientist 'F' & HoO and Sri. R. Meitei, Bot. Asst. Identified 12 plant species for Eastern Nagaland Flora by Dr. N. Odyuo & Dr. R. Daimary.

Listed 101 taxa of plant species collected from Nagaland by earlier workers housed in ASSAM for *Flora of Nagaland* (Vol. I & II) were carried out by Dr. A.A. Mao, Dr. N. Odyuo, and Sri D.K. Roy.

For Bryoflora of Mizoram, taxonomic descriptions were completed for seven species and studied literature pertaining to one unidentified species of *Riccia* and Identification of seventeen species is continued by Dr S.K. Singh, Scientist 'D'.

Dr. M. Murugesan, Scientist 'B' and Sri L.R. Meitei, Bot. Asstt. observed and recorded phenological data of flowering and fruiting of 21 plant species.

Micro-propagation of RET Plants of Northeast India by Dr. A.A. Mao and L. Ibemhal Chanu, Bot. Asst. subculture *Armadorum senapatianum* and *Cymbidium tigrinum* seedlings, set up experiment for *Cymbidium tigrinum* in control, 10% banana, 10% coconut, 2% charcoal in MS. (Approx. 400 seedlings) to standardise the protocol. Callus culture of *Rhododendron coxianum* with new leaf explants in different concentration of 2,4 D carried out. 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 containing different concentrations of BA and GA. DNA extraction from *Zingiber* sp., *Caulokaempferia* sp., *Calanthe* sp., *Pennilabium* sp., *Dendrobium* sp. (Manipur), *Dendrobium* sp. (Nagaland), *Pyrenaria cherrapunjeana* and the extracted DNA was quantified on 0.8% agarose gel and documented. PCR amplification of DNA samples of *Rhododendron* spp., *P. venustum* (Meghalaya), *P. venustum* (Arunachal) using different primers (rbcl, mat-K, ITS and tnrH) was completed and visualized and documented under UV transilluminator.

Public service rendered

Identified about seventy five samples of specimens received from various institutions.

Visitors/students

Hon'ble Secretary, Sri A.N. Jha, Secretary, Govt. of India, Sri M.K. Singh and Additional Secretary and Dr. M.M. Kutty of MOEF & CC visited Experimental Botanical Garden, Barapani on 04.08.2016 for inauguration of the Fern House. Dr. Kailash Chandra, Director of Zoological Survey of India, Dr. Upadhye, Advisor, MoEF & CC, Eastern Regional Office, Shillong were also present on this occasion.



Inauguration of Fern House at Barapani by Sri A.N. Jha, Secretary, MOEF&CC, Govt. of India

Photo: ERC

One scientist, six research scholars, one lecturer from various Institutions, Colleges and Universities visited the Centre.

Meetings/workshop attended

Dr. P. Singh, Director, BSI, Dr. A.A. Mao and Dr. Chaya Deori attended a meeting on 4th August with Shri Ajay Narayan Jha, Secretary, Govt. of India, Ministry of Environment, Forest & Climate change in the Conference Hall of North East Regional Office, MoEF&CC, Shillong.

Dr. N. Odyuo and Sri D.K. Roy attended Conservation Assessment and Management (CAMP) Prioritization Processing Using IUCN Red list categories and criteria for the wild medicinal plants of Tripura organised by Medicinal Plant Board of Tripura (MPBT) in association with Foundation for Revitalisation of Local Health Traditions(FRLHT), Bangalore at Geetanjali, Tripura Tourism Development Corporation Ltd., Kunjaban, Agartala from 3rd to 5th August, 2016.

HoO meeting and RCM was conducted from 29th to 30th August, 2016. Director, BSI, Er. A.K. Pathak, Scientist 'F', Dr. P.M. Padhye, Scientist 'F', Dr. B.K. Sinha, Scientist 'F' and all the HoOs from different regional centres and units attended the meeting.

Dr. A.A. Mao, Dr. S.K. Singh, Dr. Ashish V. Prabugaonkar, Scientist 'B' attended Meghalaya Traditional Practitioners' Meet, 2016 organised by Bio-Resource Development Centre, Meghalaya in collaboration with the Santhigiri Ashram, Kerala on 12th August 2016 at Conference Hall, Mameti, Upper Shillong.

– Dr. A.A. Mao
Scientist 'F' & HoO

NORTHERN REGIONAL CENTRE, DEHRADUN

Identified total 47 species and made descriptions for 85 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, Chamba District, Himachal Pradesh', 'Trees of Dehradun city and its vicinity' and 'Revision of family Cyatheaaceae and genus *Adiantum* in India'.



Photo: P.K. Pusalkar

Pentasachme wallichii (Asclepiadaceae) – a rare species



Meizotropis pellita (Fabaceae) – endemic species

Public service rendered

Assisted Mr. Kaiser, Ph. D. Research scholar, H.N.B. Garhwal University, Srinagar in identification of 25 plant specimens collected from Uttarkashi.

Identified 20 species of pteridophytes collected by Dr H.B. Naithani, former Scientist, FRI, Dehradun.

Meetings attended

Dr. S.K. Srivastava, Scientist 'E' & HoO attended meetings at Botany Division, FRI for conducting Interview for Ph.D. student on 08.08.2016 and DPC meeting, external member at Indian Institute of Soil and Water conservation Dehradun for Gr. 'C' employee on 20.08.2016.

Foundation Day Celebration

Lectures were given by the scientists of the centre on "Activities and Achievements of the centre".

Plantation at BSI, garden by the scientists/Staff on 01.08.2016.



Photo: S. Uniyal

Dr. S.K. Srivastava delivering speech on foundation Day



Photo: Devraj Agarwal

Independence Day celebration at NRC, Dehradun

Celebration of Independence Day

The 70th Independence Day was celebrated by the officials of NRC.

Visitors/students

37 Forest Ranger trainees from Forest Training Academy, Uttarakhand to the herbarium, museum and botanical gardens on 23.08.2016. Explained them about herbarium techniques and methodology.

Publications

Srivastava A., Srivastava, S.K. and Dangwal, L.R. 2016.

Pittosporum eriocarpum Royle (Pittosporaceae): An endemic, endangered species of North-West Himalaya facing threat. *Indian J. Forest.* 39 (2): 169–172.

Ambrish, K. and Srivastava, S.K. 2016. *Girardinia diversifolia* (Link) Friis subsp. *suborbiculata* (C.J. Chen) C.J. Chen & Friis (Urticaceae): A new record for India. *Indian J. Forest.* 39(2): 151–153.

Sharma, S., Kholia, B.S., Kumar, B. and Joshi, P. 2016. Addition to the flora of Mizoram. *Indian J. Forest.* 39 (2): 175–178.

Kumar, P. and Singhal, V.K. 2016. Morphological and ecological adaptations and cytological studies in *Astragalus rhizanthus* Royle ex Benth. (Papilionaceae), an endemic to Himalayas. *Cytologia* 81: 155–160.



Photo: Devraj Agarwal

Dr. S.K. Srivastava addressing the visited Forest Rangers

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

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

Dr. Dinesh Kumar Agrawala Scientist 'C' & HoO identified Seven Orchid species and illustrated two species for the project, "Red listing of Orchids of Eastern Himalaya as per IUCN criteria".

Sri S.K. Raj, Bot. Asst., identified 18 species from 54 unidentified herbarium sheets.

Sri Subash Pradhan, Field man, identified five species from 18 unidentified herbarium sheets.

Digitisation of Herbarium specimens

830 herbarium sheets of Caryophyllaceae and Hypericaceae were digitized and meta data of 900 herbarium sheets were entered into EXCEL -worksheet.

Public service rendered

Dr. D.K. Agrawala, on 04.08.2016, attended National Research Centre (NRC) for Orchids; Pakyong as an expert for evaluation of performance of their scientists for nomination of institutional awards. Dr. Agrawala has also trained Dr. Subarna Hajong, Indian council of Agricultural Research (ICAR)- National Bureau of Plant Genetic Resources (NBPGR) Scientist for her three months (16.05.2016–16.08.2016) Professional Attachment Training (PAT) and completed the project on “Taxonomic studies on the genus *Neottianthe* Schltr. (Orchidaceae) in India”.

Dr. D. K. Agrawala, on 22.08.2016, conducted an orientation programme for the Sikkim University faculties and M. Sc. Students (Taxonomy special) who are supposed to take up respective families for “Flora of Sikkim”. The objective, methodology and plan of work were explained in this programme.

Meeting attended

An internal review meeting was conducted on 24.08.2016 for the implementation of Official Language policy at Sikkim Himalayan Regional Centre (SHRC).



Interaction with Professors and Students from Sikkim University at SHRC, Gangtok



Official language implementation review meeting held at SHRC, Gangtok

Visitors/students

Dr. D.R. Chettri, Dr. Santosh Rai and Dr. Arun Chhetri, along with nine M.Sc. students from Dept. of Botany, Sikkim University visited SHRC to take part in the orientation programme for persuasion of dissertation work (for the students) on 22.08.2016.

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

SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. C. Murugan, Scientist 'D' and S. Arumugam, Bot. Asst. conducted a field tour to Meghamalai Wildlife Sanctuary, Tamil Nadu from 3rd to 12th August 2016 and collected specimens of 281 field numbers in duplicate. Dr. K.A.A. Kabeer, Scientist 'D' and Sri A. Ravi Kiran, Bot. Asst. conducted a field tour to Kodaikanal Wildlife Sanctuary, Tamil Nadu from 17th to 28th August, 2016 and collected a total of 105 field numbers in duplicate.

Herbarium specimen identification

Dr. K.A.A. Kabeer and Sri A. Ravi Kiran identified 30 field numbers collected from Kodaikanal Wildlife Sanctuary, Tamil Nadu.



Photo: J.V.Sudhakar

Dr. J.V. Sudhakar explaining to TN Forest department officials about Endemic *Ficus* and their importance



Photo: K.A.A. Kabeer

SRC officials collecting the orchid, *Eria* from Kodaikanal Wildlife Sanctuary, Tamil Nadu

Ex-situ conservation

Dr. S. Kaliamoorthy, Scientist 'D' and his team introduced 68 plant samples in National Orchidarium and Experimental Garden (NOEG), Yercaud. The team multiplied 9 orchid samples including the endemics *Liparis wightiana*, *Goodyera procera* and *Habenaria rariflora*. The team developed 19 seedlings and 25 cuttings and transplanted 62 plant samples.



Photo: A. Ravi Kiran

Actinodaphne bourneae (Lauraceae)



Photo: K.A.A. Kabeer

Aeschynanthus perrottetii (Gesneriaceae)



Photo: A. Ravi Kiran

Luisia birchea (Orchidaceae)



Pogostemon wightii (Lamiaceae)

Scanning Electron Microscopy (SEM)

Dr. J.V. Sudhakar, Bot. Asst. examined the achenes of *Ficus* species and taken 15 images. Under the project 'Study of Nutlets of tribe Cypereae and Fimbristyledeae from south India', 20 SEM images were taken for the species of *Fimbristylis*.

Public service rendered

During this month, a total of 47 plants were identified for research scholars and students from various institutions. Dr. J.V. Sudhakar, accompanied TN Forest Department officials for collection and introduction of endemic *Ficus* species in the Ficutorium at Anamalais.

Visitors/students

A batch of 12 P.G. students and 2 staff from S.H. College, Thevara, Ernakulam visited the museum, herbarium and library of this regional centre on 18.08.2016. 23 research scholars from various institutions also visited herbarium and library. 114 students from College of Arts & Science, Trichengodu and Andavan College of Arts & Scienced, Trichy visited the NOEG, Yercaud.

Publications

Singh, R.K., Kholia B.S. and Sudhakar J.V. 2016. *Pedicularis artiae*, a new species of Orobanchaceae from Sikkim Himalaya, India. *Kew Bull.* 71(3): 36.

Singh, R.K. 2016. Notes on author attribution and typification of two names of *Impatiens* (Balsaminaceae). *J. Jpn. Bot.* 91(4): 237–241.

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

WESTERN REGIONAL CENTRE, PUNE

Dr. J. Jayanthi, Scientist 'D' and Dr. C.R. Jadhav, Botanist identified 40 angiosperm species under the projects 'Flora of Biligirangaswamy Temple Wildlife Sanctuary, Karnataka' and 'Floristic survey of Someshwara Wildlife Sanctuary, Karnataka'. Dr. A. Benniamin, Scientist 'D' identified six pteridophyte species and studied spore morphology of one species under the project 'Ferns of Karnataka'. Smt. S. Shreya, SPF identified fourteen microfungi under the project 'Microfungi of BRT Wildlife Sanctuary, Karnataka'.



Photo: J. Jayanthi

Flowering of *Argyreia elliptica* in Biligiri Rangaswamy Temple Wildlife Sanctuary, Karnataka

Public service rendered

Dr. P. Lakshminarasimhan, Scientist 'E' & HoO reviewed one manuscript for the journal *Phytotaxonomy*. Dr. Lakshminarasimhan also reviewed one Ph.D. thesis from Karnataka University, Dharwad.

During this month identification and authentication certificates were issued to five students from B. Pharm, M. Pharm. Colleges, Ph.D. and P.G. students from different institutions.



Photo: C.R. Jadhav

***Firmiana colorata* in flowering in Someshwara Wildlife Sanctuary, Karnataka**



Photo: C.R. Jadhav

***Garcinia indica* in fruiting in Someshwara Wildlife Sanctuary, Karnataka**

Meetings /programme attended

Dr. P. Lakshminarasimhan attended the meeting on for establishing protocols for conservation, propagation, multiplication and reintroduction of the endangered plants at Institute of Biosciences and Technology, Aurangabad on 08.08.2016.

Dr. P. Lakshminarasimhan launched the six Indian Fungal Databases conceived and created by Dr. Kiran Ranadive & Ms. Neeta Jagtap at Patrakar Bhavan, Pune on 20.08.2016.

Dr. P. Lakshminarasimhan, Dr. Rashmi Dubey, Scientist 'D' and Dr. Priyanka Ingle, Scientist 'B' attended Nagar Rajyabhasha Karyavan Samiti (NARAKAS) meeting held in National Institute of Virology (NIV), Pune on 25.08.2016.

Dr. P. Lakshminarasimhan attended the Selection Committee meeting constituted for interviewing candidates for the position of Junior Research Fellow in the Biodiversity and Palaeobiology Group as an External Expert at Agharkar Research Institute, Pune on 26.08.2016.

Visitors/students

About 70 students and 2 faculties from Rizvi College, Mumbai visited WRC on 11.08.2016 as part of their curriculum.

Sri Amol, Research student from National Chemical Laboratory (NCL), Pune visited WRC for herbarium consultation.

Two students, Sri S. Dhanavate Rahul and Sri A. Pathare Sagar, Sri Sadguru Gangageer Maharaj Science, Gautam Arts and Sanjivani Commerce College, Kopargaon, Ahmednagar visited WRC for one month under Summer Training programme.

Two students from Abasaheb Garware College of Arts and Science, Pune visited WRC for library consultation.

Dr. Rinku J. Desai, PDF of Acharya Jagadish Chandra Bose working in Department of Botany, The M.S. University of Baroda, Vadodara visited WRC on 26.08.2016.

BSI survey throws light on state's flora updates

Ferns, fungi and orchids among plant species studied across prominent habitats; fact-finding reveals both faltering and flourishing specimens, leads to new records

Mayuri Phadnis
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TWEET @ThePuneMirror

With anthropogenic pressures responsible for the loss and change of biodiversity, surveys have become important to understand the complexities of the situation. Against this backdrop, the Botanical Survey of India (BSI) recently conducted several studies and found a vibrant patchwork of results, discovering both rare and endangered species across the state to draw conclusions about their conservation.

P. Lakshminarasimhan, scientist E and head of BSI's western regional centre, said, "Pteridophytes (like ferns), orchids and foliicolous fungi (growing on vascular plant leaves) were documented at places like Koyna Wildlife Sanctuary, semi-arid grasslands (Great Indian Bustard sanctuary) and more."

Over 91 pteridophyte species belonging to 46 genera were found, including 27 rare and threatened ones from the north Western Ghats forests – some of these were recorded for the very first time here. "Being shade and moisture loving, most fern species grow in forests interiors. Any disturbance to vegetation leads to degeneration. In some riparian (riverbank) forests in Mahabaleshwar, species like *Dryopteris cochleata* have been completely eradicated due to the forest destruction. Apart from conserving ferns in situ, threatened species also need to be conserved ex situ, via cultivation in gardens and greenhouses for re-establishing them in the wild later," said Dr A Benniamin, scientist D at BSI.

The orchid survey found 101 orchid species from 33 genera; a preliminary assessment showed that 38 species are threatened and 6 possibly extinct in the state, as they could not be located. Said Dr Jeewan Singh



At the GIB sanctuary, for example, scientists discovered various plants important for the threatened bird.

Jalal, scientist C, BSI, "Their distribution is patchy and concentrated in high rainfall areas, like Khandala-Lonavala, Mahabaleshwar-Koyna-Chandoli, Radhanagari and Amboli. Orchids need moisture to survive and areas with reliable moderate to high rainfall support a greater diversity."

Alarmingly, some 40 per cent of them are affected by habitat degrada-

tion, with declines noted in Panchgani, Kaas and Khandala. In Kaas, tourists pluck rare orchids for their homes; *Pectelid gigantea*, known as the 'Queen of Khandala' and found commonly 50 years ago, has seen a fall in numbers to be now confined to a few commercial spots. The fate of the Panchgani Orchid is similar, thanks to tourism pressures like horse and camel rides that have made the flora-rich plateau barren.

At the GIB sanctuary, 450 flowering plant species were found, with diverse herbs, climbers, shrubs and trees. "We found more than 60 grasses and 290 herbaceous plants. The latter finish their life cycle in one to three months during the rains, and remain dormant in dry months. Their flowers are the main attraction for a variety of insects, which are the main diet of the GIB and other grassland fauna. We must protect and increase the population of this flora," said Dr J Jayanthi, scientist D at BSI.

The survey of foliicolous fungi identified more than 300 species and over 1,000 diseased samples. "Eight new species were added to the country's fungi. Some fungal taxa were found new to the state and 280 new host records were seen. Interestingly, more than 71 per cent of total fungal isolates (from different forest ecosystems) were found on new host plants, forming new host records. The study showed a high fungal diversity in plant-associated microhabitats, like leaf surfaces," said BSI scientist Dr Rashmi Dubey.

BSI researchers Prajakta Pathare and Prakash Diwakar shared, "Koyna Wildlife Sanctuary harbors more than 900 flowering plant species, of which over 187 are endemic. Over 134 species of birds, 25 of mammals, 5 of invertebrates, 22 of amphibians (including the endemic Koyna toad), 19 of reptiles, 81 of butterflies and 40 of freshwater fish have been seen in this sanctuary."

A popular article on BSI published in Times of India, Pune Mirror, 8th August 2016

Publication

Dubey, R. and Sengupta, S. 2016. *Tripospermum melghatensis* - A new anamorphic fungus from Melghat Tiger Reserve, Maharashtra, India. *J. New Biological Reports* 3(2): 103–105.

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

PLANT OF THE MONTH



Jacaranda mimosifolia D. Don (BIGNONIACEAE) known as Jacaranda or Lilac-blue wonder is a sub-tropical tree native to South America. The name 'jacaranda' is of Guarani (national language of Paraguay) origin, meaning 'fragrant'. It was first introduced in Royal Botanic Garden, Calcutta (presently Acharya Jagadish Chandra Bose Indian Botanic Garden) in 1841 from Brazil. This medium sized tree with blue flowers is usually planted as avenue tree.

By Dr. B.K. Singh



Sri A.N. Jha, Secretary, MoEF & CC, Govt. of India, inaugurating 'Fern House' at Experimental Botanic Garden (ERC), Barapani, Meghalaya

PROMOTIONS

Dr. J.S. Jalal, Dr. (Mrs.) K.A. Sujana, Dr. (Mrs.) Pushpa Kumari, Dr. V.K. Rawat and Dr. M.K. Kandwal, Scientist 'C' promoted to Scientist 'D' and Dr. J.H.K. Benjamin, Scientist 'B' promoted to Scientist 'C' under the Flexible Complimenting Scheme (FCS) with effect from 23.08.2016.

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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