



BSI NEWSLETTER



The monthly electronic newsletter of Botanical Survey of India

Volume 1
Number 5

December 2014

From the Director's Desk



Since founding of the Botanical Survey of India in 1890, its staff, and students spread across the country in different regional research centres, botanic gardens and herbaria have made numerous contributions to increase the understanding as well as conservation of plants and fungi with many benefits for mankind.

Science and conservation work done by staff of BSI helps to discover, describe and understand the plant and fungal diversity of India and safeguard the plant life for our future and promote the sustainable use of plants.



In 2014 many noteworthy achievements were made by this institution. A genus, 52 species, 10 varieties were described new to science and 2 genera, 47 species, 2 species were reported for the first time from the country. Scientists of BSI published more than 250 research papers during this calendar year. The year is also important because, BSI launched archives website and is planning to launch digital version of Flora of India and journal Nelumbo online. The initiation of this electronic newsletter has also been well received by general public.



We had a special visitor during this month. On 24th December 2014, Sri Ashok Lavasa, IAS, Secretary, Ministry of Environment, Forest & Climate Change (MoEF & CC) visited the AJCB Indian Botanic Garden and Central National Herbarium, Howrah. In the Botanic Garden, Sri Lavasa was taken around important spots, which include the 250 years old Banyan tree, Large Palm House and some lakes. The Secretary appreciated the efforts of the scientists to artificially pollinate more than 100 years old female double coconut plant by obtaining pollens from Thailand.



In Central National Herbarium, Sri Lavasa saw the type specimens, old herbarium collections of 18th Century, the correspondence made by the then botanists, colour paintings drawn by native artists using vegetable dyes, Wallichian Catalogue, etc. The Secretary also visited the Digital Herbarium section, where he was appraised about the e-Flora of India, plant checklist portal of India and Digital Herbarium software. Sri Lavasa appreciated the work carried out by the scientists of BSI and emphasized the need of using simple language in botanical research so that the work of BSI should reach the common public.



During this month, besides regular scientific activities of each unit as highlighted in this newsletter, Hindi workshop was organized in some of the regional centres of BSI and the officials were imparted training to improve their working skill in Hindi. I am sure these trainings help in reach out programme of the institution as emphasized by Sri Lavasa, Secretary, MoEF & CC, New Delhi.

Finally, I should like to recognize and express my appreciation to all of the staff, students at BSI and MoEF & CC for their efforts and support during this year.

Happy browsing!

Paramjit Singh

Director, Botanical Survey of India, Kolkata



Botanical Survey of India
Established in 1890



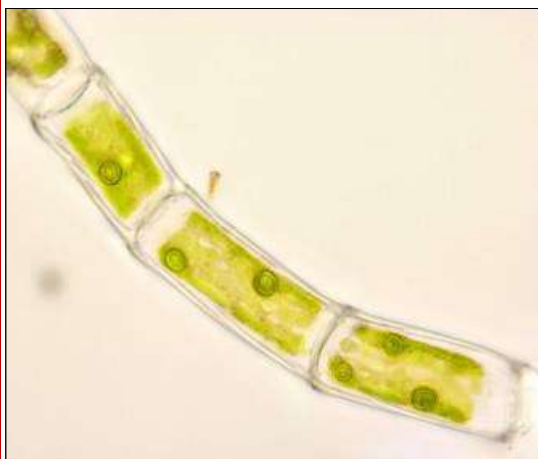
HEAD QUARTERS, KOLKATA

Dr. R.K. Gupta, Scientist 'C' conducted a field tour to Saraikela Khersawan and East Singhbhum districts of Jharkhand for more than 10 days in connection with the Algal flora of Jharkhand and collected 86 samples from the various habitats. Dr. Gupta also identified and made description for 4 species of blue green algae viz., *Aphanothece saxicola*, *Aphanothece microscopica*, *Chroococcus tenax*, and *Chroococcus turgidus*.

Dr. S.K. Das, AJCBPDF studied the algal samples from various parts of Sikkim and Vikramshila Gangetic Dolphin Wildlife Sanctuary, Bhagalpur and identified 11 species. Dr. Das also studied the detailed morphology of some riverine *Spirogyra* species and reported rarely observed nucleus and nucleolus.



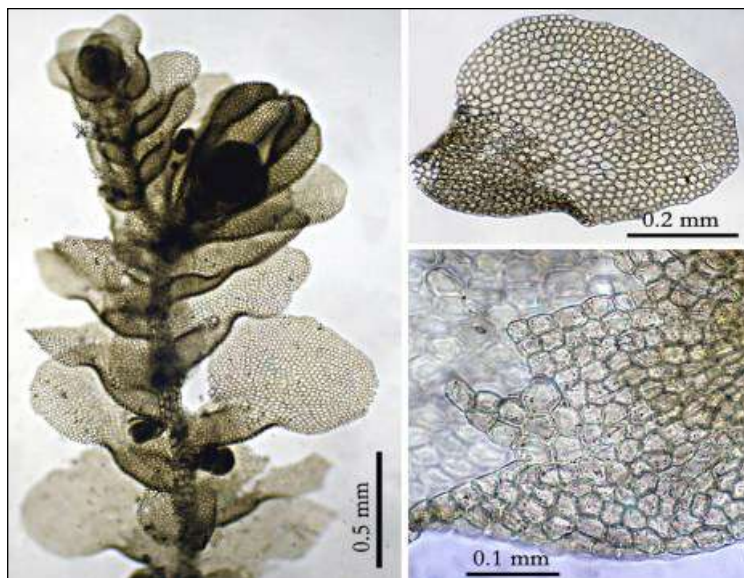
Cheilolejeunea turgida (Liverwort)



Ulothrix cylindricum (Green algae)



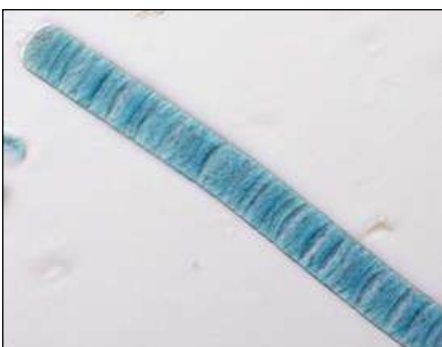
Eunotia bidens
(Diatom)



Lejeunea bidentula (Liverwort)



Spirogyra sp.
(Green algae)



Oscillatoria limosa
(Blue green algae)

In connection with the Wild mushrooms of Sikkim, the specimens collected in earlier tours are being identified by Dr. Kanad Das, Scientist 'D'. Similarly, for the project, Liverwort & Hornwort Flora of Sikkim, Dr. Devendra Singh, Scientist 'C' made descriptions, illustrations and taken micrographs for more than dozen species.

Sri Manoj Emanuel Hembrom, Botanist attended National Seminar on "Cyptogamic Botany: Learning to Know" at Kalyani University on 18th and 19th December 2014 and deliver an Oral Presentation on "Preliminary studies on Wood-rotting and Gasteroid Macrofungi of Rajmahal Hills, Jharkhand".

Visitors/students

Four teaching staff and 37 students from Dr. B.A.M. University, Maharashtra visited the Fungal Herbarium.

Public service rendered

Dr. A.B.D. Selvam pharmacognostically studied and authenticated three wood samples of the heartwood of *Pterocarpus santalinus* L.f. (Papilionaceae), which were received from Directorate of Revenue Intelligence, New Delhi.

Publication

Das, K., Parihar, A. and Hembrom, M.E. 2015. A new species of *Bondarzewia* from India. *Turkish J. Bot.* 39: 128—133.

ACHARYA JAGADISH CHANDRA BOSE INDIAN BOTANICAL GARDEN, HOWRAH

In connection with the project 'Survey and Assessment of growing stock of economic bamboos of West Bengal' Dr. Pushpa Kumari, Scientist 'C' conducted a field tour to different parts of Hooghly District, West Bengal in the mid-December 2015.

Dr. B.K. Singh visited Sunderban Biosphere Reserve during end of December and brought mangrove saplings for introduction in the botanic garden.



View of a creek in Sunderban Biosphere Reserve

Maintenance of winter annuals in different divisions including Nursery I, Onge Math, and Bicentenary Gate were made.



Winter Annuals at Nursery I of AJCBIBG, Howrah

Lectures delivered

Dr. M.U. Sharief, Scientist 'D' delivered two lectures on ethnobotanical studies on Jarawa tribe and Orchid diversity at UGC Academic Staff College, Mysore on 5th December, 2014.

Visitors/students

Sri Ashok Lavasa, Secretary, MoEF & CC, Delegation from Department of Plant Resources, Govt. of Nepal; Justice Manjula Chellur, Hon'ble Chief Justice, Calcutta High Court; Justice

Kamal Pasha, Hon'ble Justice, Kerala High Court and Justices from Rajasthan and Madhya Pradesh High Courts visited botanic garden.



Sri Ashok Lavasa, Secretary, MoEF & CC at 250 years old Banyan tree at AJCBIBG, Howrah



Sri Ashok Lavasa, Secretary, MoEF & CC at one of the nurseries in AJCBIBG, Howrah



Justice Manjula Chellur, Hon'ble Chief Justice of Calcutta High Court on her visit to AJCBIBG, Howrah

35 students of Balagarh Vigyan Manch, Hooghly visited the botanical garden during this month.



Dr. B.K. Singh interacting with the students of Balagarh Vigyan Manch, Hooghly



Dr. M.U. Sharief delivering lecture at UGC Academic Staff College, Mysore

CENTRAL NATIONAL HERBARIUM, HOWRAH

In connection with the Flora of Jaldapara National Park (ca 216.51 sq. km), Dr. K. Karthigeyan, Scientist 'C' conducted a field tour and surveyed about 100 sq. km. area and collected specimens by utilising 110 field numbers.



A view of vegetation along rivulets in Jaldapara NP



***Hibiscus fragrans* (Malvaceae)**



***Oxyspora paniculata* (Melastomataceae)**



***Pachystoma pubescens* (Orchidaceae)**

Dr. O.N. Maurya, Scientist 'B' conducted a field tour to Vikramshila Gangetic Dolphin Wildlife Sanctuary, Bhagalpur during the last week of December and vouched 62 field numbers.

Botanical exploration tour was conducted for more than 10 days from mid-December in connection with the Flora of Bihar Project to Aurangabad and Nawada districts by Sri Anand Kumar, Bot. Asst. and Sri Shyam Biswa, Pres. Asst. A total of ca 670 specimens (225 field nos.), including 3 samples of Pteridophytes were collected.



Umga Pahar near Madanpur range, Aurangabad



Drosera burmanni



Exacum pedunculatum



Hibiscus panduriformis



Ludwigia adscendens



Wetland with *Nymphaea* sp. and *Potamogeton* sp. at Tetai Bigha, Aurangabad



**Kakolat waterfall,
Nawada**



Sal forest at Kakolat, Nawada

For the ongoing 'Digitisation of Economic botany herbarium specimens at CAL under e-Governance programme of Ministry of Environment & Forests, the digitization work of 4000 specimens belonging to various families were carried out by the outsourced agency (M/s Cyan Colour Lab, Kolkata) for which specimens were segregated from Hall nos. 3, 4 & 5 of CNH by scientific staff, research and post-doctoral fellows. These specimens have been barcoded, photographed and data based.

Public service rendered

Sent information to Prof. Jean Carlos Budke, Dept. Ciências Biológicas, URI Sete de Setembro, Brazil about the availability of the specimens of *Hovenia dulcis* (Rhamnaceae) at CAL. Similarly, information was sent to Dr. D.S Rawat, Department of Biological Sciences, G.B. Pant University, Pantnagar, Uttarakhand about the nonavailability of Type of *Arenaria ferrugenia* (Caryophyllaceae) in Type section as well as in general herbarium of Central National Herbarium (CAL).

Sent scanned images of *Ixonanthes icosandra* (Griffith 784/1), *Bouea macrophylla* (Griffith 1105 & 1106), *Tristania merguensis* (Griffith 2341) and *Corylopsis himalayana* (Griffith 3378) to Dr. Ian Turner, Editor, Journal of Tropical Ecology, East Sussex, England.

13 plant identification certificates (total 24 species) were issued to different institutes/ students/ researchers in connection with their research work.

Scientists of Central National Herbarium reviewed the manuscripts for various journals.

Dr. V. Sampath Kumar, Scientist 'C' reviewed three project proposals submitted to the MoEF & CC, New Delhi for financial Assistance. Dr. V. Sampath Kumar acted as a subject editor, for the article, "Pollination ecology of *Scyphiphora hydrophyllacea* C.F. Gaertn. (Rubiaceae), a non-viviparous evergreen tree species" published in the *Journal of Threatened Taxa* (JoTT).

Lectured arranged

In CNH conference room a talk by Dr. Kanad Das, Scientist 'D', Cryptogamic unit, Kolkata was arranged on "Exploration, collection, characterization and identification of wild mushrooms with emphasis on a recent attempt in Slovakia", on 4th December 2014. This talk was attended by Scientists, Scientific staff, Post-Doctoral fellows and Research scholars.

Visitors/Students

Sri Ashok Lavasha, Secretary, MoEF & CC visited on 24th December 2014. 14 delegates from Ministry of Finance, Department of Plant Resources, Nepal visited CNH on 17th December 2014 along with their Director General, Yam Bahadur Thapa. Apart from this, Anup Deshpandeya, Research Scholar, Goa University, Akram Ghalami, Research Scholar, Delhi University, Rinchen Yanggzo, Herbarium, Biodiversity Board, Bhutan also visited the CAL herbarium for consultation. Students and faculty members of the following college and schools visited CNH as part of their study tour: Dinjata College, Cooch Behar (50 students); Rishi Bankim Chandra College for Women, 24-Parganas (N); Lady Brabourne College,

Kolkata (50 students); Ramnagar College, East Medinipur (40 students); Vidyanagar College, 24-Parganas (S) (40 students); Surendranath College, Kolkata (34 students); Bangabasi Evening College, Kolkata (44 students); Sarojini Naidu College for Women, Kolkata (22 students); College, Kolkata (47 students); Taki Government College, 24-Parganas (N) (9 students); Dhruva Chand Halder College, Dakshin Barasat (36 students); Ramakrishna Mission Ashtravama High School Baranagar (20 students); Saraswati Shisu Vidya Mandir of Radha Govind Inter college of Ranchi, Jharkhand. (25 students.); Sikkim University, Gangtok (students 15). Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra (34 students); Vidyasagar Chakdaha College, Nadia (66 students); S.B.E.S. College of Science, Aurangabad, Maharashtra (36 students).



Dr. Subir Bandyopadhyay giving lecture to the students

Publications

- Halder, S., Dey S., Kumar, A. and Venu, P. 2014. Lectotypification of *Fimbristylis tenera* (Cyperaceae). *Phytotaxa* 188(5):287–291.
- Kumar, A., Venu, P. and Rao, Y.V. 2014. Rediscovery of *Typhonium inopinatum* (Araceae) from India with notes on the identity of *T. khandwaense*. *Rheedea* 24(2): 120–123.
- Kumar, R., Bhattacharjee, A., Singh, S. and Sharma, S. 2014. A rare species of *Calanthe* R.Br. recorded for the first time from India. *Telopea* 16: 213–217.
- Ormerod, P. and Bhattacharjee, A. 2014. The generic identity of *Zeuxine pulchra* King & Pantl. (Orchidaceae: Goodyerinae). *Phytotaxa* 191(1): 177–180.
- Sampath Kumar, V. 2014. An illustrative account of the Labiates in Himalayas of Indian region. *Phytodiversity* 1(1&2): 77–90.

CENTRAL BOTANICAL LABORATORY, HOWRAH

During the month, 36 plant species collected from Deogarh district, Odisha were identified by Dr. Harish Singh, Scientist 'C' & HoO and Dr. P. A. Dhole, Bot. Asst.; 15 plant species from Jajpur district, Odisha were identified by Sri P.K. Baske, Botanist. Documented 50 ethno-botanical informations of Deogarh district in prescribed format by Dr. Harish Singh and Dr. P. A. Dhole. In connection with the 'Flora and Ethno-botany of Balasore district, Odisha', 104 specimens were identified and 414 information were documented by Dr. K.A. Sujana, Scientist 'C', Sri R. Saravanan, Ms. Monika Mishra, Bot. Assts. Ms. Sagari Chaudhury, JRF working on the project 'Ethnobotanical study of Lodha (A primitive tribal Group) of West Bengal and neutraceutical analysis of selected plant species' conducted a field tour to Purulia district in the last week of December. During this study, information about Primitive Tribal group of West Bengal was documented by visiting villages namely Ghatihuli, Bhupatipalli, Bareriya, Kashipur nearby forest of Bandwan, Baghmundi, Ajoydhya and collected ethno-biological information.



A cushion made from the leaves for carrying load on head



A fish catching basket selling in local market at Kashipur, Purulia



A tribal woman selling colourful baskets at Kashipur weekly market (Hat)

Rajbhasha meeting

Quarterly *Rajbhasha karyanawan Samiti* Meeting was organized at CBL on 17th December 2014.



Rajbhasha meeting held at HoO chamber, CBL.

Visitors/students

295 Students and 20 Teachers from Contai P.K. College, Contai, East Midnapore; Bongabasi Morning College, Kolkata; Taki Govt. College, Taki, 24 Parganas (S); VJR College, Jadavpur, Kolkata; Surendranath College, Kolkata; Vidhyasagar College, Kolkata; Ramnagar College, East Midnapore; Vidyanagar College, 24 Parganas (S) and Baba Saheb Marathwada University, Aurangabad, Maharashtra, S.B.E.S. College of Science, Aurangabad, Maharashtra were visited to Ethno-botanical museum of CBL.



Dr. Dhole delivering lecture to the students in Ethno-botanical Museum, CBL, Howrah



Mr. Baske delivering lecture to the students during their visit to Ethno-botanical Museum, CBL, Howrah

Publications

Das Das, M., Sujana K.A., Pramanik, A. Maity, D. and Sreekumar, P.V. 2014. *Mouriri guianensis* (Memecylaceae) at AJCB Indian Botanic Garden, Howrah. *ENVIS News Letter* 19 (1): 4–5.

Ratheesh, N.M.K., Nandakumar, M.K., Prajeesh, P., Sujana K.A., Sunil, C.N. and Shaju, T. 2014. A new species of *Sonerila* Roxb. (Melastomataceae) from Kerala, India, *Ann.Pl. Sci.* 3

(11): 863–868.

Singh, H., Krishna, G., Saravanan, R., Dhole, P.A. and Baske, P.K. 2014. *Handi*—The indigenous rice beer of tribal in Odisha. *ENVIS News Letter* 19(1): 4

Singh, H., Baske, P.K. and Saravanan, R. 2014. Ethnobotanical Observations on Balangir District of Odisha, India. *J. Econ. Taxon. Bot.* 38 (1): 40–73.

INDUSTRIAL SECTION INDIAN MUSEUM, KOLKATA

For enrichment of Botanical gallery a field trip was conducted to Pune and its surrounding areas by Sri Shirodhkar, Botanist in the mid-December. The collected 30 plant materials are displayed at Botanical Gallery of the Indian museum.



***Artemisia nilagirica* - Whole plant used in urinary trouble**



***Solanum indicum* - Roots are used as expectorant, diaphoretic, and diuretic**



***Gnidia glauca* - Leaves used to recover muscle swellings**



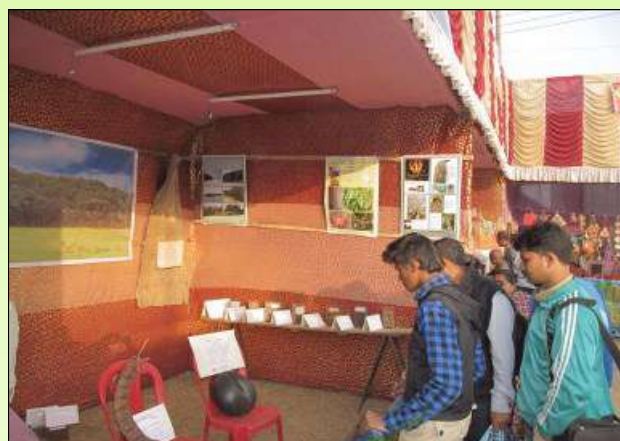
Medicinal plant samples on sale at Bimashanker (Pune dist.), Maharashtra

The Scientific staff completed the data basing (digital) of 380 dicot and 327 monocot herbarium specimens and 31 specimens collected by I. H. Burkill (an eminent economic botanist) at BSIS along with the relevant field notes.

7 unidentified herbarium specimens of the family Poaceae were authenticated by Sri Arumugam, Bot. Asst.

Under MoEF funded project (Photographic Digitization of Economic Herbarium specimens at ISIM, CNH & CBL, Kolkata) quality check of 3600 photographs was completed.

ISIM participated in the Damodar Mela at Raspur, Amta (West Bengal) held from 7th to 13th December, and displayed the Economically important plant specimens.



Economic plant specimens displayed at Damodar Mela, Amta, Howrah, West Bengal

**Publication**

Panday, S., Sinha, B. K. and Singh, S. K. 2014. *Epirisanthes elongata* (Polygalaceae) from Mizoram. *Envis Newsletter* 19 (1): 3.

ANDAMAN AND NICOBAR REGIONAL CENTRE, PORTBLAIR

Dr. T.A.M. Jagadeesh Ram, Scientist 'C' made Lichen exploration tour to Great and Little Nicobar Islands for a fortnight and collected 382 specimen packets. Dr. Jagadeesh Ram also studied Chemistry of 80 specimens by Thin Layer Chromatography (TLC) method.

Dr. M. Y. Kamble, Scientist 'C' conducted one field tour to Trinket Island and vouched 60 field numbers (240 specimens).

Dr. Kamble also identified 23 species collected from this tour.

Dr. Lal Ji Singh, Scientist 'C' conducted one tour to Middle Andaman for a week in the last week of December and collected seeds of 9 species and seedlings of 19 species in connection with the Germination studies on Forest Trees of Andaman and Nicobar Islands.

For the project, Quantitative Assessment and Mapping of Plant Resources of Nicobar Islands (QAMPRAN), Dr. C. Murugan, Scientist 'D' & PI, S. Aron, Research Associate and R. Sathiyaseelan, SRF conducted one tour to Tillangchong Islands for about 20 days from 3rd week of November to 1st week of December. The tour party collected 504 specimens and studied 15 grids.

One tour conducted to Great Nicobar Islands by Dr. S. Prabhu, AJCBPDF in connection with Morphological and Molecular characterization of *Memecylon* L. (Melastomataceae) in Andaman and Nicobar Islands. Dr. Prabhu collected 20 specimens and 55 seedlings of two species viz. *Memecylon megacarpum* and *Memecylon andamanicum*.

Dr. C. Murugan, Scientist 'D' & HoO identified 100 plant specimens belonging to 25 species from the earlier collections. Dr. Murugan conducted a herbarium consultation tour to Central National Herbarium (CAL) for about 10 days in mid-December and consulted the specimens of *Orophea*, *Memecylon*, *Psychotria*, *Ixora* and *Mitreola*.

For the ongoing project on phenological survey of Dhankari Experimental Garden-cum-Arboretum, Phenology of 12 tree species is recorded at the Garden-cum-Arboretum, Nayashar by Dr. Lal Ji Singh.

During this month, 264 herbarium sheets belong to 3 families were scanned for development of virtual herbarium.

Symposium attended

Dr. M. Y. Kamble, Scientist 'C' delivered a lecture on "Floral biodiversity of coastal ecosystems in Andaman and Nicobar Islands" during 'National consultation on Andaman Sea Studies and Island Sustainability' organized by Bay of Bengal

Large Marine Ecosystem Project (BOBLME) at Hotel Sun Sea Resort, Port Blair, on 16th December 2014.



A view of Trinket Island



Lumnitzera littorea



Jacquemontia pentantha



Malachra capitata

Hindi workshop

Hindi cell of this office organized Hindi workshop at Conference Hall, BSI, Port Blair on 29th and 30th December 2014 in which Dr. S.K. Dwivedi, Scientist, Fishery Survey of India was invited as resource person.



Dr. S.K. Dwivedi imparting training during Hindi workshop

Publication

Sathiyaseelan, R., Prabhu, S., Aron, S. and Murugan, C. 2014. *Malachra* L. (Malvaceae) – A generic Record for the Bay Islands. *J. Andaman Sci. Assoc.* 19(1): 50–51.

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Dr. Manas Bhaumik, Scientist ‘D’ conducted one herbarium consultation tour to DD, CAL and ASSAM for about 40 days from the 2nd week of November and studied about 1200 specimens and also identified about 215 field numbers.

Dr. Vineet Kumar Rawat, Scientist ‘C’ conducted a field tour to Anjaw, Lower Dibang valley, Ziro (Lower Subansiri District) from 3rd week of November to 1st week of December and collected specimens of 260 field numbers and identified some species of Polypodiaceae of North East India.



Arthromeris wallichiana



Pyrrosia flocculosa

The specimens collected in the earlier tours are being identified in connection with the Flora of Lohit District and Kamlang Wild Life Sanctuary by Dr. Souravjyoti Borah, Botanist and Grass flora of Arunachal Pradesh by Dr. Manish K. Kandwal, Scientist ‘C’.

In connection with the NHPC funded project, “Creation of Biodiversity Park & Plant Repository for Conservation & Propagation of Species for Educational Purpose”, at NHPC, Gerukamukh, Assam, Dr. P. Satyanarayana, Scientist ‘D’, Dr. Rajib Gogoi, Scientist ‘D’ and Dr. V. K. Rawat, Scientist ‘C’ visited the project site on 8th and 9th December and finalised the demarcation of various sections for the proposed park.

Meetings and Seminars attended

Dr. P. Satyanarayana attended a meeting of the Technical Committee for Protected areas in the chamber of PCCF (WL & BD) & CWLW, Itanagar on 10th December 2014.

Dr. Vineet Kumar Rawat, Scientist 'C' presented a paper in the conference at Ziro, organized by ARRI, Itanagar on 3rd December 2014.

Publications

Rawat, V.K., Satyanarayana, P. and Ramashankar 2014. Diversity and Ethno-botanical Importance of Pteridophytes from Mehao Wildlife Sanctuary, Arunachal Pradesh, Eastern Himalayas. Pp.17—44. *Proc. Ayurvedic RRI*, Itanagar.

Rawat, V.K. and Satyanarayana, P. 2014. Morphotaxonomy of Genus *Pyrrisia* Mirbel (Polypodiaceae) from Mehao Wildlife Sanctuary, Arunachal Pradesh. Pp. 67—75. *Proc. Ayurvedic RRI*, Itanagar.

Shende, K. and Rawat, V.K. 2014. Diversity and Phylogenetic analysis in Plant Kingdom: Techniques and Tools. Pp. 91—115. *Proc. Ayurvedic RRI*, Itanagar.

Rawat, V.K. and Pathare, P. 2014. *Leptochilus decurrens* Bl. forma *lanceolatus* – A new generic Record for Maharashtra, Western Ghats. *J. Econ. Taxon. Bot.* 37 (3): 425—428.

Rawat, V.K. 2014. Contribution to the Pteridophytic flora of India: Ecological and taxonomical studies on the Pteridophytic flora of Maharashtra. *J. Econ. Taxon. Bot.* 37 (3): 541—559.

Rawat, V.K. 2014. Epiphytic Pteridophytes of Mehao Wildlife Sanctuary, Arunachal Pradesh. *J. Econ. Taxon. Bot.* 37 (4): 688—694.

Dhudhani, S. and Rawat, V.K. 2014. Pteridological scenario in Western Ghats: An Appraisal. In: Ramashankar (Ed.), *Souvenir on Traditional Healing and Practices in North-East India*. Pp. 116—129, ARRI, Itanagar.

ARID ZONE REGIONAL CENTRE, JODHPUR

Sri Ravi Prasad, Bot. Asst. conducted a tour to Udaipur from 8th to 10th December 2014 and collected some plants for introduction in the AZRC garden.

Sri Vinod Maina, Scientist 'C' & HoO and Sri M.K. Singhadia, Botanist conducted one day tour to Balesar (Jodhpur Distt.) on 19.12.2014 for collection of live plants.

Shri Vinod Maina, Shri. Ravi Prasad and Dr. Peddi Harikrishna collected rare live plant of *Withania coagulans* (Stocks) Dunal from Pal village (Jodhpur) and introduced successfully in botanical garden.

The following plants were introduced AZRC botanic garden collected from Jodhpur and Udaipur districts (Rajasthan).

RET plants:

Withania coagulans

Cordia crenata

Medicinal plants:

Terminalia bellirica

Helicteres isora

Madhuca longifolia

Sterculia urens

Glycyrrhiza glabra

Saraca asoca

Plumbago zeylanica

Phyllanthus emblica

Boswellia serrata

Butea monosperma

Other Economic plants:

Dioscorea pentaphylla

Dioscorea bulbifera

Ornamental plant:

Saraca asoca



Senna siamia at BSI AZRC Botanic Garden



Stocks of *Withania coagulans*

Symposium attended

Dr. S. L. Meena, Scientist 'C' and Sri Ravi Prasad attended 84th Annual session of NASI, "Symposium on Desert Science - opportunities and challenges" on 4th December, 2014, at Jai Narayan Vyas University, Jodhpur.

Workshops Organized

A Hindi workshop was organized on "Rajbhasha Hindi Evam Uska Kryanwayan" on 15th December, 2014 at BSI, AZRC, Jodhpur. Dr. A. K. Dikshit, Scientist 'E' & Hindi Prabhari, DMRC, Jodhpur was invited as a Trainer in this workshop.

Visitors/students

60 students of Shri Rishi Arabindo School, Jodhpur visited on 23.12.2014. To them a talk was delivered about "Plants & conservation" and "Climate change" related issues by Dr. S. L. Meena, Scientist 'C', Sri Ravi Prasad and Dr. Hari Krishna Peddi, Bot. Assts.



Students visit to the Museum and Garden of AZRC, BSI



Dr. S.L. Meena explaining to the students about plant conservation

**BOTANIC GARDEN OF INDIAN REPUBLIC, NOIDA**

Dr. Sheo Kumar, Scientist 'D' & HoO visited Jodhpur and Howrah during this month and brought seed and seedlings for introduction in the garden. Altogether 66 species of seeds and seedlings were collected, of which 9 species are listed in RET.

Participation

Participated in International Mountain Day held at Ministry of Environment, Forest & Climate Change (MoEF & CC), New Delhi on 11th December 2014. In this programme 29 photographs of orchids and 9 photographs of plant and flower paintings (made in natural colour during 18th century) were displayed along with brief description of orchids and paintings. These posters were donated to NMNH, New Delhi

for exhibiting in their Auditorium as suggested by the Advisor, MoEF & CC.

Meetings attended

Dr. Sheokumar, Scientist 'D' attended 8th Meeting of Expert Committee for Declaration of Eco-Sensitive Zones for following three proposals in the Ministry of Environment, Forest & Climate Change, New Delhi, which was chaired by the Sri Hem Pande, Addl. Secretary on 3.12.2014:

i. Finalisation of a draft notification declaration of Eco-Sensitive Zone around Kapilash Wildlife Sanctuary in the State of Odisha.

- ii. Draft Regional Plan of Dahanun (1995–2014) in the State of Maharashtra.
- iii. Zonal Master Plan for Mount Abu Eco-Sensitive Zone prepared by the Government of Rajasthan under the provision of the Mount Abu Eco-Sensitive Zone Notification.

News Released

सुंदरवन का ससल्वर स्पून बॉटननकल गार्डन ने सुंजोया : 25 अक्तूबर को

कोलकाता के बॉटननकल गार्डन से बी जी आई आर लाया गया था पौधा –
हिन्दस् तान, 03.12.2014, पष् ट 19।

Visitors/students

During this month 117 students with 3 teachers, 205 Indian nationals and 8 foreigners visited the garden.

CENTRAL REGIONAL CENTRE, ALLAHABAD

In connection with the ongoing project on Lichens of Rajasthan, Kutch (Gujarat), a field tour was undertaken by Sri Rasananda Kar, Bot. Asst. and Sri Siljo Joseph, SRF to Gujarat for about fortnight from the last week of November 2014 to 2nd week of December 2014. About 200 sq. km area covering Gulf of Kutchh, Wild Ass Sanctuary, Bhuj; Chinkara WLS, Narayan Sarovar; Great Bustard WLS, Nalia; Gandhidham; India Bridge, Kutchh Desert WLS, Kutchh; Mandavi Port, Van Chetna Kendra, Mandavi; Khijadiya Bird Sanctuary, Narara Island, Jamnagar; Bet Dwarka Island, Chaurasi Dhuna Island, Okha Madhi, Dwarkadhish mangrove, Dwarka and their vicinities between lat. 22°05.26'23" – 23°59'12.3" N to long. 68°29'54.2" –71°07'25.4" E and altitudes up to 425 m were surveyed and lichens of 250 field nos. were collected majority of which belong to family Roccellaceae and Physciaceae.



Dictyographa sp. (Roccellaceae) from Jamnagar area, Gujarat



Dirina sp. (Roccellaceae) from Jamnagar area, Gujarat



Roccella montagnei and other crustose Roccellaceae members on tree Dwarka, Gujarat

In connection with the project 'Revisionary studies on Tribe *Helianthae* (Family- Asteraceae)' Sri Jeetendra Kumar Vaishya, SRF undertaken a herbarium and field study tour to BSI, Itanagar and BSI, Shillong for 10 days from the last week of November 2014 to first week of December 2014. Sri Vaishya studied 228 specimens in ASSAM and 110 in ARUN herbaria. In connection with the project entitled 'Systematic studies on the lichen flora of Kerala', Sri Digvijay Verma, JRF undertaken a field tour to Kerala for about a month from the last week of November 2014 to 3rd week of December 2014 and collected more than 600 specimens.

For the ongoing projects on floral diversity of Upper Ganga Ramsar site, Uttar Pradesh; Flora of Chhattisgarh; Floristic diversity of Parvati Aranga Wildlife Sanctuary and adjoining Tikri forest area, Gonda, U.P. a total of 93 species collected during earlier tours were identified. Similarly, for the Revisionary studies on the family Pertusariaceae as well as Roccellaceae; Taxonomic studies on lichenised non thelotremoid Indian Graphidaceae, and lichen of terai region, Uttar Pradesh a total of 29 species were identified.

Visitors

Prof. Shail Km. Mishra, Principal Rashtriya Sanskrit Sansthan, Ganganath Jha Campus, Allahabad visited Botanic Garden on 11th December 2014 towards establishment of herbal garden in their campus. Drs. Yashwant Rai and Shiv Kumari, Green Planet Welfare Association, Meerut visited the Botanical Garden and herbarium on 27th December 2014.

Workshop/ training organized/attended

A one day Hindi workshop was organized at the regional centre in the conference hall of CRC, BSI, Allahabad on 17th December 2014.

Sri Jeetendra Kumar Vaishya made an oral presentation entitled, "Taxonomic status of tribe Heliantheae – Asteraceae in India and its medicinal value" in the National workshop on traditional healing practices in North East India, Ziro, Arunachal Pradesh organized by Ayurveda Regional Research Institute, Itanagar, during 2-3 December 2014.

Meeting attended

Dr. G. P. Sinha, Scientist 'D' & HoO attended a meeting of Central Government Employees Welfare coordination committee on 03.12.14 at A.G. Office, Allahabad.

Publications

Gupta, P. and Sinha, G.P. 2014. Rediscovery of lichen genus *Psorotheciopsis* Rehm for India. *Feddes Repert.* 124: 154–156.

Jagadeesh Ram, T.A.M. and Singh, K.P. 2014. *Dictyonema irrigatum* (Berk. & M.A. Curtis) Lücking, an interesting Basidiolichen from Great Nicobar Island, India. *Indian J. Forest.* 37(3): 361–364.

Joseph, S., Sinha, G. P. and Ramchandran, V.S. 2014. *Opegrapha*

irosina Vain. (Lichenized Ascomycota) – a new record for India. *Indian J. Forest.* 37(3): 297–298.

Joshi, B., Ansari, A.A. and Tiwari, A.P. 2014. *Crotalaria epunctata* Dalz. (Fabaceae) – a new record for Uttar Pradesh. *Indian J. Forest.* 37(3): 359–360.

Joshi, Y., Jagadeesh Ram, T.A.M., Singh, P. and Sinha, G.P. 2014. *Caloplaca indica*, a new lichenized Ascomycetes from Eastern Himalaya. *Natl. Acad. Sci. Lett.* 37(6): 517–519.

Singh, R.K. 2014. New plant records for Karnataka state from Mookambika Wildlife Sanctuary. *Indian J. Forest.* 37(3): 329–332.

Singh, R.K. and Garg, A. 2014. *Parthenium hysterophorus* L. – Neither noxious nor an Obnoxious weed. *Indian For.* 140(12): 1260–1262.

Vaishya, J.K., Ansari, A.A. and Dubey, N.K. 2014. Notes on *Parthenium argentatum* A. Gray (Asteraceae). *Indian J. Forest.* 37 (2): 237–240. 2014.

Vaishya, J.K., Ansari, A.A. and Dubey, N.K. 2014. Notes on *Tridax trilobata* (Cav.) Hemsl. (Asteraceae). *Indian J. Forest.* 37(3): 295–296.

Vaishya, J.K., Ansari, A.A., Dubey, N.K. and Sachan, S. 2014. Notes on *Synedrella vialis* (Less.) A. Gray (Asteraceae). *Indian J. Forest.* 37(3): 313–316.

DEECCAN REGIONAL CENTRE, HYDERABAD

Conducted one field tour to East Godavari district by Dr. M. Ahmedullah, Scientist 'D' and Dr. M. Shankar Rao from the 3rd week of November to first week of December 2014 and covered 07 sacred groves viz., Peddakonda, Rampa, Puttagundi, Dummadurwada, Pochammagudi (Gondur), Talupulammalova, Polarammatalli (Machavaram). The tour party collected specimens of 69 field numbers.



View of Sacred Grove at East Godavari District in Andhra Pradesh



Sacred Grove at East Godavari District, Andhra Pradesh

In connection with the Flora of Seshachalam Biosphere Reserve documentation of 10 species have been completed by Dr. P.V. Prasanna, Scientist 'F' and Dr. M. Shankar Rao. Similarly, documentation of eight species were completed by L. Rasingam, Scientist 'C' and Dr. M. Shankar Rao in connection with the Flora of Nagarjunasagar–Srisaillam WLS.

For Flora of Satkosia Tiger Reserve (Sri K. Chandra Mohan, JRF) and Flora of Kawal Tiger Reserve (Ms. Annamma, JRF) identified 37 and 20 species respectively.

Meeting attended

Dr. L. Rasingam attended the Research Advisory Group meeting at Institute of Forest Biodiversity, Dhulapally, Hyderabad on 5th December 2014.

EASTERN REGIONAL CENTRE, SHILLONG

During the period, 51 live plants and specimens of 571 field numbers were collected by conducting five field tours. Documented 43 species in connection with the ongoing projects on various floras (Murlen National Park, Mizoram; Amchang Wildlife Sanctuary, Assam; South Garo Hills Dist., Meghalaya; Laokhowa Wildlife Sanctuary, Assam; Yangoupokpi Lokchao Wildlife Sanctuary, Manipur, Eastern Nagaland).

In connection with the ex-situ conservation of Endemic, threatened and economically important plants of the region and recording of phenological data on flowering and fruiting of species growing in EBG, Barapani Experimental garden, recorded phenological data of 10 plant species growing in the garden.

Micro-propagation of RET species of NE India

For *Cymbidium tigrinum* MS Media prepared and subculture was done. Cultures established in vitro are being maintained. For *Armadorum senapatianum* MS media prepared with addition of charcoal and Subculture done at regular period. For *Rhododendron coxianum* Subculture was done and data recorded; set up experiment for multiple shooting using PGRs. For *Paphiopedilum hirsutissimum* set up experiment for multiple shooting using BA.

For project related to Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of selected species of NE India, regular maintenance of initiated cultures of *Paris polyphylla* in MS medium is being done with different plant growth regulators for shoot induction experiments. Comparative qualitative phytochemical analysis was done with the leaf samples (hot water extract) of *Paphiopedilum venustum* (both Meghalaya and Arunachal Pradesh). Two different experiments were initiated with nodal explants and mature seeds of *Pyrenaria khasiana*.

Public service rendered

Identified about 34 samples of specimens received from various institutions.

Visitors/students

Two Professors, Eight Research Scholars, Twenty five Students and Two Teachers visited the Centre from various Institutions, Colleges and Universities.

Publication

Kumar, R., Singh, S.K., Sharma, S. and Verma, D. 2014. Recollection of *Arundina graminifolia* var. *revoluta* (Orchidaceae) from India. *Richardiana* 15: 128–134.

NORTHERN REGIONAL CENTRE, DEHRADUN

Identified 119 species and made descriptions for 63 species of Angiosperm in connection with the Flora of Uttarakhand, Flora of Kalesar National Park, Floristic Diversity and Phytosociological study of Simbalbara National Park, Flora of Nandhour Wild Life Sanctuary, Flora of Sonanadi WLS, Revisionary study on the of Tree ferns of India and genus *Lepisorus* in India.



Cheilanthes tibetica— a fern New record for India



Onychium siliculosum –a medicinal fern growing in Chamapawat

International Mountain Day

Drs. A.N. Shukla and Brijesh Kumar, Bot. Asstt. attended an International Mountain Day on 11th December, 2014 at MoEF & CC, New Delhi, organized by National Museum of Natural History. In this programme displayed 20 photographs in Photo gallery, especially of Western Himalayas were displayed.



Sri Hem Pandey, Addl. Secretary, MoEF & CC was appraised about the displayed Western Himalayan vegetation and plants

Seminar /workshop attended

Dr. B.S. Kholia, Scientist 'C' attended a National fern symposium on "Modern approaches to Pteridophytes: Biology, Biodiversity and Bioresources" at Palampur, HP on December 20–21, 2014 and presented a paper.



Dr. B.S. Kholia receiving a token of Gift from Dr. P.S. Aahuja, DG, CSIR at Palampur

Public service rendered

Dr. S.K. Srivastava, Scientist 'D' & HoO provided list of RET

species to Dr. Puja Sharma, Asst. Prof. Dept. of Floriculture and Landscape Architecture, and Dr. Bhupendra Dutt, Asst. Prof. Dept. of Forestry, YS Parmar University, Nauni, Solan. Dr. P.K. Pusalkar, Scientist 'D' helped Sri Younus Rasheed and Sri Nissar Ahmed, Research scholars of Panjabi University, Patiala for identification of 80 specimens collected from Cold desert region of Ladakh.

Dr. Debasmitta Pramanik, Bot. Asst. assisted Sri V. Vishnu Prasad and Ms. Ankita Gupta, Ph.D. Scholars, Wood Anatomy, FRI, Dehradun for identification of 43 plant species collected from Odisha and Jharkhand.

Identified 9 species for students and research scholars of various Institutes and Universities and issued certificates.

Publications

Pusalkar, P.K., Singh, D.K. and Srivastava, S.K., 2014. New and Noteworthy plant records in Western Himalayan flora. *Ann. For.* 22(1): 49–56.

Manikandan, R., Srivastava, S.K. and Deroliya, P.K. 2014. Economically important plants from Govind Pashu Vihar Wildlife Sanctuary, Western Himalaya. *Ann. For.* 22(1): 57-76.

Panwar, G.S. 2014. Tricotyledony in critically endangered herb *Eremostachys superba* Royle ex Benth. (Lamiaceae). *Ind. Forest.* 140 (12): 1265-1266.

Kholia, B.S. 2014. *Cheilanthes tibetica* - a new record for India. *Ind. J. Forest.* 37: 179–182.



Dr. B.S. Kholia acting as a rapporteur with Prof. Khullar at a Symposium in Palampur

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

In connection with the project on Red listing of Orchids of Eastern Himalaya as per IUCN criteria: Dr. Dinesh Kumar Agarwala identified 33 orchid species. Dr. Agarwala also made morphological characterization and illustrations for 9 species. For the ongoing project, Flora of the Shingba Rhododendron Sanctuary, identification of 202 plant specimens of 69 plant species were completed by Dr. C.S. Prohit, Bot. Asst.

Phenology of 50 EET plants in the campus garden was recorded weekly.

Meeting attended

Dr. D.K. Agrawala attended the National Consultation cum Workshop on "Kangchendzonga Landscape conservation and Development Initiative" organized by GBPIHD, Sikkim unit on 3rd and 4th December 2014.

SOUTHERN REGIONAL CENTRE, COIMBATORE

Dr. G.V.S. Murthy, Scientist 'F' & HoO and Sri G. Gnanasekaran, Bot. Asst. accompanied Dr. M. Sanjappa, former director, BSI in field tours to Anaimalai Tiger Reserve (ATR) on 06.12.2014 and Siruvani hills on 07.12.2014 for the collection of *Andrographis* and *Smithia* species. Sri Ravi Kiran, Bot. Asst. accompanied Dr. M. Sanjappa, in a field tour to Ooty, Avalanchi, Banghetapal and Naduvattam from 08 - 10 December 2014.

Dr. M. Palanisamy, Scientist 'C' and Sri S.K. Yadav, Bot. Asst. identified a total of 33 field numbers of seaweeds collected in the previous tour and computerised data sheet for Seaweed Flora of Karnataka Coast (ca 320 km long). In connection with the Flora of Srivilliputhur Grizzled Giant Squirrel Wildlife Sanctuary, Tamil Nadu (ca 485 sq. km.), 54 field numbers were identified by Dr. K.A.A. Kabeer, Scientist 'C' and Sri G. Gnanasekaran, Bot. Asst. Similarly, a total of 13 field numbers from previous collections were identified by Dr. J.H. Franklin Benjamin, Scientist 'C' and Sri R.G. Vadhyar, Pres. Asst. for the ongoing project Flora of Malabar Wildlife Sanctuary, Kerala (ca. 74.22 sq. km.).

Sri Ravi Kiran transplanted 50 garden palm seedlings into polybags and 65 cactus plants and raised its 50 new buds in Glass house of SRC, BSI.

Scanning Electron Microscopy

Sri G. Gnanasekaran, imaged 25 SEM micro-graphs of the leaf surface and seeds of the Acanthaceae genus *Andrographis* Wall. ex Nees. Sri Gnanasekaran also took the SEM images of 5 species of *Smithia* for Dr. M. Sanjappa, former Director, BSI. Sri J.V. Sudhakar studied 3 *Ficus* taxa and took 7 SEM images.

Public services rendered

114 visitors including research scholars, scientists/professors/lecturers, UG and PG students etc. consulted MH herbarium and Library, while a total of 826 persons in 112 parties visited National Orchidarium and Experimental Garden (NO & EG), Yercaud. 27 plant samples were identified for the researchers. Mr. J.V. Sudhakar and Mr. K. Yarrayya accompanied with the team of Bharathidasan University, Trichy in a field tour to Palani hills for a week and collected 90 field nos. and also confirmed one new record (*Solanum auriculatum* – Solanaceae) to palani flora. They also collected one endemic and endangered plant (*Anisochilus argenteus* - Lamiaceae) and one vulnerable orchid (*Taeniophyllum alwisii* –

Orchidaceae) and introduced in SRC office garden and National Orchidarium, Yercaud respectively.



Team of Bharathidasan University, Trichy and BSI, Coimbatore during exploration of Palani Hills



A view of dense Kukkal shola of Palani Hills



***Anisochilus argenteus* - Lamiaceae, endemic plant from Papammal temple shola of palani hills**

Lectures delivered

Dr. M. Palanisamy delivered a lecture on “Diversity of Indian Seaweeds” at Govt. Arts & Science College, Kozhikode on 12.12.2014. Dr. J.H. Franklin Benjamin attended a “Consultative workshop on Participatory Biodiversity Conservation in KMTR: Lessons Learnt and the way forward” between December 18-20, 2014, organised by Dept. of Environment and Forests, Govt. of TN at Tirunelveli. Sri G. Gnanasekaran delivered a lecture on ‘Botanical Nomenclature’ at Department of Botany, Nirmala College for Women, Coimbatore on 4th December 2014. Mr. S.K. Yadav delivered lecture on ‘Herbarium Methodology’ and practically demonstrated processing of the specimens to 12 trainees (teachers/lecturers), undergoing winter school training at Seed centre, TNAU on 9th December 2014.



Dr. M. Palanisamy delivering lecture at Govt. Arts & Science College, Kozhikode

Rajbhasha meeting

Quarterly meeting of the Official Language Implementation Committee was held at BSI, SRC on 15 December, 2014.

Ph.D. Viva-Voce

The Public Viva –Voce for the award of Ph. D. degree to Sri J.V. Sudhakar, Bot. Asst. was held at this regional centre on 3.12.2014. Sri Sudhakar successfully defended his work on “Taxonomic Revision of the Indian *Ficus* L. (Moraceae)”.

Publication

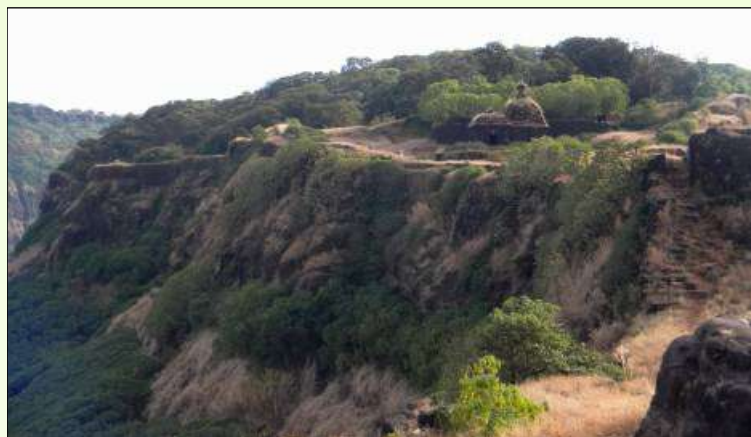
Ben, C.P., Sivanadanam, V. and Gnanasekaran, G. 2014. Comparative phytochemical screening and antimicrobial efficacy studies on two endemic species – *Jatropha maheshwarii* Subr. & Nayar and *Jatropha villosa* Wight. *J. Pharmacogn. & Phytochem.* 3(4): 213–219.



Dr. J.V. Sudhakar defending his thesis during his Ph.D. Viva-voce

WESTERN REGIONAL CENTRE, PUNE

Ms. Prajakta S. Pathare, SRF undertaken a floristic survey tour for a week in the 1st week of December 2014 to Koyana Wildlife Sanctuary in connection with the project “Floristic diversity of Koyana Wildlife Sanctuary, Maharashtra”. Ms. Pathare



A view of Vasota fort in Koyana Wildlife sanctuary showing rocky cliff vegetation

surveyed an area of about 45 sq km and collected specimens of 75 field numbers.

During this month about 60 angiosperm specimens, five pteridophyte specimens and 22 fungi species were identified by the scientists & researchers of this centre.

Dr. J.S. Jalal, Scientist ‘C’ prepared detailed descriptions for 21 orchid species under the project “Orchids of Maharashtra”.

Conference attended

Dr. A. Benniamin, Scientist ‘D’ & HoO attended the National Conference on “Modern Approaches to Pteridophytes: Biology, Biodiversity, Bioresource”, organized at CSIR- Institute of Himalayan Bioresource Technology, Palampur, Himachal Pradesh during 20-21 December 2014. Dr..Benniamin received Prof. S.S .Bir Gold Medal Award for the Excellence of Pteridophytes for the year 2014 in that National Conference.

Sri Devandra Tripathi, JRF attended National Conference on ‘Modern Approaches to Pteridophytes: Biology, Biodiversity, Bioresource’ organized at CSIR- Institute of Himalayan Bioresource Technology, Palampur, Himanchal Pradesh during 20-21 December, 2014. Sri Tripathi received 1st Prize for poster presentation on paper entitled “A Preliminary survey of Pteridophytes from BRT WLS, Karnataka”.

Public service rendered

Dr. J.S. Jalal identified 11 orchid specimens for research students from Maharaja Sayajirao University of Baroda, Vadodara, Gujarat.

Visitors/students

Scientist and research students from Department of Atomic Energy (DAE) Township Kalpakkam, Tamil Nadu; CSIR-National Chemical Laboratory, Pune; Botanical Survey of India,

Southern Regional Centre, Coimbatore, I.D.A. Foundation, Gujarat, National Law School of India University, Bengaluru; St. Xavier's College, Mumbai; V. G. Vaze College, Mulund, Mumbai visited this centre for herbarium and library consultation.

Publications

Jalal, J.S., Jayanthi, J. and Pankaj, K. 2014. A note on the morphological variations in *Rhynchosstylis retusa* (Orchidaceae) in Maharashtra, India. *MIOS* 15(11): 16–20.

जे० जयंती और जीवन सिंह जलाल. 2014. ग्रेट इंडियन बस्टर्ड अभयारण्य की वानस्पतिक विविधता, Vanaspati Vani. Vol. 23: 30 – 33. समीर पाटिल, जीवन सिंह जलाल, जे० जयंती और ए. बेन्निआमिन. 2014. पश्चिमी घाट के कुछ स्थानिक सिरोपेजिया, Vanaspati Vani. Vol. 23: 26 – 29.

PROMOTIONS

Congratulations to four Scientists of Botanical Survey of India who got in-situ promotion to their next higher grade under Flexible Complementing Scheme after they were assessed by the Departmental Peer Review committee at Ministry of Environment, Forest & Climate Change, New Delhi.

- ⇒ **Dr. D.K. Singh**, Hqrs, BSI, Kolkata promoted as Scientist ‘G’.
- ⇒ **Dr. P.M. Padhey**, Hqrs, BSI, Kolkata promoted as Scientist ‘F’.
- ⇒ **Dr. P.V. Prasanna**, DRC, BSI, Hyderabad promoted as Scientist ‘F’.
- ⇒ **Dr. B.K. Sinha**, ISIM, BSI, Kolkata promoted as Scientist ‘F’.



PLANT OF THE MONTH



Ensete superbum (Roxb.) Cheesman (MUSACEAE) also known as Rock Banana or Wild Banana is a native of Western Ghat and other parts of peninsular India. An under-exploited medicinal plant is having a good potential as a garden plant.

By Dr. B.K. Singh



Secretary is being appraised about type specimens at CAL



Er. A.K. Pathak explaining to the Secretary about Digital Herbarium



Director, BSI narrating to the Secretary about BSI's achievements in the past five years

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

19 • वीरभ • 19 दिसंबर 2014 • हिन्दुस्तान

बौद्धिक ने सत्रों को ड्रेन करती बंदने वाले स्कूलों के शिक्षक कार्यवाई के अद्वैत दिग्गज

नोएडा

25 अक्टूबर को कोलकाता के बॉटनिकल गार्डन से नोएडा के बीजीआईआर लाया गया था पौधा

सुंदरवन का सिल्वर स्पून बॉटनिक गार्डन ने संजोया

गोएडा/प्रभा उपर्यथा

बॉटनिक गार्डन के वैज्ञानिकों ने सुदूरपश्चिम प्रदेश के हेरेडियम रिट्रोमिड को संरक्षित करने में सफलता हासिल की है। गार्डन में वैज्ञानिकों के इस पौधे को अक्टूबर में लाना पड़ा था। पौधे में कई पौधों जैसी विशेषताएँ हैं। वैज्ञानिक संरक्षक इस पर नजर रख रहे हैं।

सुदूरपश्चिम के हेरेडियम रिट्रोमिड (हेरेडियम रिट्रोमिड) को हेरिटेज रिजर्व में शामिल है। इस पौधे को 25 अक्टूबर को कोलकाता के बॉटनिक गार्डन से नोएडा के बीजीआईआर लाया गया था।

बॉटनिक गार्डन के वैज्ञानिकों (बॉटनिक गार्डन ऑफ इंडिया रिट्रोमिड) ने लंबा समय था पौधों लाने के पीछे मुख्य मकसद इस सुदूरपश्चिम पौधे को संरक्षित करना था। गार्डन को लाने में नयी पौधों को लाने पर दस अंकों का फोकस किया गया। संरक्षक हेरेडियम रिट्रोमिड के अर्थ पौधे में कई विशेषताएँ हैं।

बॉटनिक गार्डन के प्रमुख वैज्ञानिक डॉ. आर. कुमार ने बताया कि हेरेडियम रिट्रोमिड मुख्य रूप से सुदूरपश्चिम के क्षेत्रों में ही पाया जाता है। इसीलिए हमारे कर्मियों को बड़ी चुनौती पड़ पौधे को लाने के बादवाप में संरक्षित करना था।

300 से अधिक बॉटनिक गार्डन हैं पूरे देश में

बॉटनिक गार्डन में पौधे संरक्षित किए जाते हैं और लोग देख सकते हैं। जबकि बॉटनिक गार्डन में पौधों के संरक्षण के लिए नए मॉडल की व्यवस्था की जाती है।

कैसे पढ़ाया खत्म होने की कामना पर

हेरेडियम रिट्रोमिड के लक्ष्य होने के पीछे लाने की कामना नए और खतरा बनने के लिए इन पौधों को बड़े पैमाने पर काटती है। यह पौधा काफी लंबा और मजबूत होता है। इन कामों में शामिल लोगों को लाने के लिए इसका बड़े पैमाने पर इस्तेमाल होता है। बड़े जंगल और टॉपर के कुछ हिस्सों में सुदूरपश्चिम में बनाया जाते हैं।

सुंदरी के नाम से पड़ा सुंदरवन का नाम

हेरेडियम रिट्रोमिड या सुंदरी मुख्य रूप से हिन्दू धर्म के क्षेत्रों में ही पाया जाता है। इसको किलर सुदूरपश्चिम में पाया जाता है। कुछ साल पहले इस पौधे का नाम सुंदरवन से सुंदरवन में ही पड़ा गया था। इस पौधे के नाम से ही सुदूरपश्चिम नाम पड़ा था। पर बड़े पैमाने पर काटने की वजह से सुंदरवन में यह पौधा खत्म होने को बचाना पर ध्यान दिया है। फलफूल, केला और लहसुन के सुदूरपश्चिम में ही पाया जाता है।

विशेषताएँ:

- इस पौधे में फूल के लंबे लंबे बीज होते हैं।
- पत्तों के बीच में फली होती है।
- इस पौधे के पत्ते 10 से 20 सेंटी. के होते हैं।
- पत्तों के बीचवाले हिस्से में ही फली होती है और इसका फल फलित होता है।
- इसमें लंबाई वाले फूल फलित पौधे की तरह दिखते हैं।

उपयोगी:

- इसमें लंबे लंबे फल का इस्तेमाल पकौड़ी, चोखा और फल में होने वाले समरूपों का इस्तेमाल होता है।
- फलित को बचाने लाने की कला होती है इस पौधे की खेती में।
- यह पौधा पत्तों को चाय बनाने में भी काफी उपयोगी है।

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