



भारतीय वनस्पति सर्वेक्षण
BOTANICAL SURVEY OF INDIA

ANNUAL RESEARCH PROGRAMME 2017-2018

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BOTANICAL SURVEY OF INDIA

पर्यावरण, वन एवम् जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
भारत सरकार/GOVERNMENT OF INDIA

Annual Research Programme 2017-2018

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Cover photo : View of Kameng River making boundary of Pakke Tiger Reserve, East Kameng District, Arunachal Pradesh. (Courtesy: Sanjay Kumar)

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ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Sr. No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2017 – 2018		
1.	Flora of East Kameng, Arunachal Pradesh	Dr. U. K. Tiwari, Scientist B	2015 – 2019	Q1. One Field tour to high altitude trekking route along Pachuk river valley from Lada block Q2. One Field tour to high altitude track along Wada bung river from C tajo (C. Tajo block) and Seppa block Q3. One Herbarium consultation tour to ASSAM for identification of unidentified specimens collected from field. Q4. Preparation of description for identified specimens. Total 02 Field tours and 01 HCT		
2.	Red listing of orchids of Arunachal Pradesh as per IUCN criteria (this project is a part of already existing project; "Red listing of orchids of Eastern Himalaya as per IUCN criteria" being executed by Dr. Dinesh Agarwala, Sci. C, SHRC, Gangtok)	Dr. Krishna Chowlu Scientist B	2015 – 2019	Q1. One Field tour to Tawang & West Kameng District for 15 days. Q1. One Field tour to Upper Dibang Valley and lower Dibang Valley. Q2. & Q4. Data sheets of 50 species to be completed. Total 02 Field tours		
3.	Introduction, conservation of Germ-plasm of Musa, Bamboos & Zingibers and documentation of phenology of garden plants	Sri B. B. T. Tham, Botanist	On going	Germplasm to be collected in regular tours and introduced at APRC, Itanagar or at Barapani, Shillong. Documentation of phenology of flowering and fruiting.		
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tours		3	1	0	0	4
Herbarium Consultation Tours		0	0	1	0	1

EASTERN REGIONAL CENTRE, SHILLONG

Sr No.	Name of the Project	Name of Executing scientists	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
4.	Taxonomic Revision of genus <i>Riccia</i> (Marchantiophyta) in India	Dr. S.K. Singh, Scientist D	2014 – 2019	Q1 Survey of Literature to be continued. Identification of the specimens of family Ricciaceae from previous collection Q2 Q3 and Q4: Study of literature will be continued and nomenclature of 9 species will be checked thoroughly. Identification, camera-lucida illustrations, description, micro-photo-graphy, SEM studies of 9 spp. to be completed. One Herbarium Consultation tour to NBRI Lucknow in Q3. Total 01 Herbarium Consultation Tour
5.	Flora of Eastern Nagaland (<i>Mon, Tuensang, Kiphire & Longleng</i>) (8335 sq km)	Dr. N. Odyuo, Scientist D; Dr. Ranjit Daimary, Bot. Asstt.	2014 – 2019	Q1 Study of relevant literature in the Library of BSI, ERC, Shillong. Study of Herbarium specimens of previous collection. Q2 One field tour to the areas unexplored so far. Identification and documentation of specimens collected. Q3 One field tour during to the areas unexplored so far. Identification and documentation of specimens collected. Q4 Identification and documentation of specimens collected during Q2 and Q3. Total 02 Field tours
6.	Flora of Nagaland (Vol. 1 & 2)	Dr. A.A. Mao, Scientist F, Dr. N. Odyuo, Scientist D and Dr. D.K. Roy, Bot. Assistant	2016 – 2021	Q1 Study of relevant literature in the Library of BSI, ERC, Shillong. Study of Herbarium specimens of previous collection. Q2 One field tour to the areas unexplored so far. Identification and documentation of specimens collected. Q3 One field tour during to the areas unexplored so far. Identification and documentation of specimens collected. Q4 Identification and documentation of specimens collected during Q2 and Q3. Total 02 Field tours
7.	Flora of west & south-west khasi hills district with special reference to the sacred groves	Dr. Chaya Deori, Sci. D and Shri S. R. Talukdar, Bot. Assistant	2016 – 2019	Study of relevant literature in the Library of BSI, ERC, Shillong. Study of Herbarium specimens of previous collection. Three Field tour to the study area in Q1, Q2 and Q4. Identification of specimens and documentation of species collected from tours Total 03 Field tours
8.	Taxonomy, phylogeny & ex-situ conservation of micro-fungal diversity from NE India with special emphasis on fungi associated with EET plants of Meghalaya	Dr. Ashish Venkatesh Prabhugaonkar, Scientist B	2015 – 2018	<ul style="list-style-type: none"> Study of fungi associated with <i>Paramignya micrantha</i>, <i>Persea parviflora</i> and <i>Pinanga griffithii</i> Compilation of work done, microphotography of isolated fungi, maintenance of culture collection and deposition of rare cultures in National culture collections.
9.	Ex situ conservation of endemic, threatened and economically important plants of the region in experimental gardens of ERC and documentation of phenological data	Dr. M. Murugesan, Scientist B and Sri. L. R. Meitei, Botanical Assistant	Ongoing	Supervision and general maintenance of works carried out in the Experimental Botanic Garden. Recording of phenological data of plant species growing in the Garden. One field tour to Tripura in Q2 for collection of live plants of RET and economically important species Total 01 ex-situ conservation tour
10.	Micropropagation of RET plants of North East India, Phase II	Dr. A. A. Mao, Scientist F & Ms. L.Ibemhal Chanu, Bot. Asstt.	2017 – 2020	<ul style="list-style-type: none"> Standardisation of the protocols for <i>Cymbidium tigrinum</i>, <i>Rhododendron coxianum</i>, and <i>Armadorum senapatianum</i>. Development of culture protocols for <i>Ilex khasiana</i> and <i>Paphiopedilum hirsutissimum</i>. Finalisation of culture protocols for <i>Cymbidium tigrinum</i>, <i>Rhododendron coxianum</i>, and <i>Armadorum senapatianum</i>. Continue development of culture protocols for <i>Ilex khasiana</i> and <i>Paphiopedilum hirsutissimum</i>.

Sr No.	Name of the Project	Name of Executing scientists	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
11.	DNA barcoding and phylogenetic analysis of 20 selected endemic species of North-east India & phytochemical screening of 11 medicinal plants New Project	Dr. Deepu Vijayan, Scientist C Dr. D. K. Roy, Botanical Asstt.	2017 – 2020	DNA barcoding and phylogenetic analysis of 20 selected endemic plants & phytochemical profiling of 11 selected medicinal plants like <i>Adinandra griffithii</i> , <i>Amomum jainii</i> , <i>Aquilaria khasiana</i> , <i>Argostemma khasianum</i> , <i>Argostemma rostratum</i> , <i>Clerodendrum indicum</i> , <i>Goniothalamus simonsii</i> , <i>Hedyotis scandens</i> , <i>Munronia pinnata</i> , <i>Pyrenaria baringtonifolia</i> , <i>Pyrenaria cherrapunjeana</i> , <i>Pyrenaria diospyricarpa</i> , <i>Pyrenaria khasiana</i> , <i>Schima khasiana</i> , <i>Zingiber bipinianum</i> , <i>Zingiber kangleipakense</i> , etc. Three collection tours in Q2, Q3 and Q4 to Nameri National Park – Assam, Dawki – Meghalaya and Garo Hills – Meghalaya respectively Total 03 Field tours

Nature of Tour	Q1	Q2	Q3	Q4	Annual
Field Tour	1	4	3	2	10
Herbarium Consultation Tour	0	0	1	0	1
Ex-Situ conservation tour	0	1	0	0	1

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

Sr No.	Name of the Project	Name of the Executing scientist	Tenure	Quantifiable deliverables (targets) for 2016 – 2017
12.	Redlisting of Orchids of Eastern Himalaya (<i>Entire Sikkim, Darjeeling district of West Bengal and Arunachal Pradesh excl. Changlang and Tirap</i>) as per IUCN criteria	Dr. D. K. Agrawala, Scientist D and Dr. David Lalsama, Scientist B	2013 – 2018	Q1. Compilation of data collected during previous year. Q2. Q3 & Q4. Remaining herbarium specimens will be studied in respect of their identity, geo-coordinates will be assigned and data to be entered in spread sheet. Taxon data sheets of 300 species to be prepared. Finalisation and submission of manuscript.

CENTRAL REGIONAL CENTRE, ALLAHABAD

Sr. No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
13.	Floristic diversity of 'Bhoj Ramsar Site' in Madhya Pradesh New Project	Dr. Arti Garg, Scientist D	2016 – 2018	Q1. Field Tour to the Bhoj Ramsar Site in MP. Identification of specimens collected. Q2. Field Tour to the Bhoj Ramsar Site in MP. Identification of specimens collected. Q3. Inventorisation and documentation of specimens collected. Q4. Finalisation and submission of manuscript. Total 02 Field tours
14.	Flora of Chhattisgarh (Monocot – 570 spp.)	1. Dr. G. P. Sinha, Sci. E 2. Dr. A. Garg, Scientist D 3. Dr. N. K. Gautam, Sci. B 4. Dr. A. Verma, Scientist B 5. Dr. B. Joshi, Bot. Asstt. 6. Sri V.K. Singh, Bot. Asstt. 7. Dr. N. Srivastava, Bot. Asstt.	2016 – 2018	1. Dr. G. P. Sinha, Scientist E: Orchidaceae – 33 spp. 2. Dr. A. Garg, Scientist D: Poaceae – 111 species 3. Dr. N. K. Gautam, Scientist B – Flagellariaceae to Aponogetonaceae and Zannichelliaceae – 30 species 4. Dr. A. Verma, Scientist B: Potamogetonaceae, Eriocaulaceae and Cyperaceae – 77 species 5. Dr. B. Joshi, Botanical Asstt.: Dioscoraceae to Pontedariaceae and Commelinaceae – 57 species 6. Sri V. K. Singh, Bot. Asstt.: Hydrocharitaceae to Burmanniaceae and Xylariaceae – 52 species 7. Dr. N. Srivastava, Bot. Asstt.: Poaceae – 93 species
15.	Floristic diversity of Kishanpur Wildlife Sanctuary, Lakhimpur Kheri, UP. (227 sq. km.)	Dr. Neelam Gautam, Scientist B Sri Arjun Prasad Tiwari, Sr. Pres. Asstt.	2016 – 2019	Q1. Processing, identification and Inventorisation of specimens collected in previous tour Q2. Processing, identification and Inventorisation of specimens collected in previous tour Q3. One Field tour to the study area. Identification of specimens collected. Q4. Inventorisation & documentation of specimens collected Total 01 Field tour
16.	Cytotaxonomical studies of selected taxa of Indian sub-tribe <i>Cassiinae</i> New Project	Dr. A. K. Verma, Scientist B	2017 – 2019	Q1 Review of literature for availability, distribution and morphological characteristics of selected taxa Q2 Collection of plant materials for cytological investigation Q3 Study of somatic chromosome count and meiotic behavior of selected plant species. (3 species) Q4 Study of somatic chromosome count and meiotic behavior of selected plant species. (3 species)
17.	Studies of fossil and living plants with reference to the impact of climate change on flora of Gangetic Plains and Central India. (New Project in collaboration with BSIP, Lucknow)	Dr. G. P. Sinha, Scientist E Dr. Arti Garg, Scientist D, Dr. A. N. Shukla, Scientist B and Dr. Neelam Gautam, Sci. B	2017 – 2019	Q1 Identification of 10 tree species, literature consultation of their distribution and abundance in Gangetic Plains and Central India. BSIP tour for project initiation and exchange of plant material. Q2 Field tour for plant collection and population studies Q3 Training of scientists on studies of Fossil plants at BSIP, Lucknow. Q4 Identification of new lot of 10 plant species, literature consultation of their distribution and abundance in Gangetic Plains and Central India. Exchange of living and herbarium plant material between BSI and BSIP. Total 01 Field Tour
18.	Trees of Allahabad city and its Environs (New Project)	Dr. G. P. Sinha, Scientist E	2017 – 2018	Herbarium and literature consultation, local photography, finalization and submission of manuscript in printable format.
19.	Editing of Flora of Uttar Pradesh, Vol. II (New Project)	Dr. G. P. Sinha, Scientist E	2017 – 2018	Updating of nomenclature, editing. Finalization and submission of manuscript in printable format
20.	Identification of old unidentified specimens of BSA.	All the scientific officials of BSI – CRC, Allahabad	Ongoing	20 specimens per month by each official.

Sr. No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
21.	Ex-situ conservation of endemic, threatened and economic plant species in the associated garden of CRC and documentation of phonological data on flowering and fruiting every month.	Dr. Sheo Kumar, Scientist E and Sri Rajesh Kumar, Bot. Asstt.	Ongoing	Maintenance of the garden; phonological studies and introduction of 05 natural tree species of the region. Two tours to be undertaken in Q2 for the collection live plants

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	2	1	0	4
Ex-situ conservation tour	0	2	0	0	2

NORTHERN REGIONAL CENTRE, DEHRADUN

Sr. No	Name of the Project	Name of executing scientists	Tenure	Quantifiable deliverables (targets) for 2017 – 2018	
22.	Revision of genus <i>Adiantum</i> L. (Adiantaceae) in India and SEM studies of selected species	Dr. Brijesh Kumar, Botanical Asstt.	2016 – 2020	Detailed study of herbarium specimens procured from different herbaria. Preparation of line drawing and photoplates. Two Herbarium Consultation tour to BSA and CAL in Q1 Q2 respectively. Procurement of protologue and type specimens.	
23.	Trees of Dehradun City and its Environs	Sri V. K. Madhukar, Botanical Asstt.	2016 – 2019	Survey, collection and photography to be conducted along with GPS information. Inventorisation and documentation of collected specimens. c 25 spp. are to be completed in each quarter.	
24.	Flora of Sechu Tuan Nala Wildlife Sanctuary, Chamba District, Himachal Pradesh	Dr. Puneet Kumar, Scientist B	2016 – 2020	Q1 Description writing of identified species. Q2 One Field tour to the study area. Identification and description of collected species Q3 One Field tour to the study area. Identification and description of collected species Q4 Identification and description of collected species Total 02 field tours	
25.	Micropropagation of critically endangered <i>Incarvillea emodi</i> (Bignoniaceae) and <i>Catamixis baccharoides</i> (Asteraceae)	Dr. G. S. Panwar, Scientist B	2016 – 2018	Q1 Screening of plant growth regulators for the multiple shoot induction and proliferation in <i>Incarvillea emodi</i> and <i>Catamixis baccharoides</i> . Q2 Screening of optimal growth medium for the root induction of the said two plants Q3 Screening of plant growth regulators for the root induction in the said plants. Proliferation of roots. Q4 Hardening and acclimatization of in vitro regenerated plantlets of said plants in green house. Shifting of the acclimatized plants of <i>Incarvillea emodi</i> and <i>Catamixis baccharoides</i> in the field.	
26.	Flora of Himachal Pradesh, Vol. 1 (New Project)	Ranunculaceae to Papaveraceae (C. 161 Spp.)	Dr K. Ambrish & Sri Durgesh Verma	2017 – 2020	Q1 Listing of species from published literature and herbarium and documentation of 12 species. Q2 One herbarium consultation tour to PUN & HUH and documentation of 10 species Q3 One field tour to different part of Himachal Pradesh and Documentation of 12 species Q4 Documentation of 14 species. Total 01 field tour and 01 Herb. Consultation Tour
Geraniaceae to Moringaceae (C. 155 Spp.)		Sri Sachin Sharma, Botanical Asstt. Sri P K Deroliya Botanical Asstt.	2017 – 2020	Q1 Listing of species from published literature and herbarium and documentation of 12 species Q2 One herb. consultation tour to PUN, documentation of 12 species. Q3 Documentation of 12 species. Q4 Documentation of 12 species. Total 01 Herbarium Consultation Tour	
Portulacaceae to Zygophyllaceae (C. 70 Spp.)		Dr. M. R. Debta, Scientist B	2017 – 2020	Q1 Listing of species from published literature and herbarium and documentation of 5 species Q2 Documentation of 6 species Q3 Documentation of 6 species Q4 Documentation of 6 species.	
Brassicaceae & Caryophyllaceae (C. 148 Spp.)		Dr. K.S. Dogra, Scientist C & Sri. V.K. Madhukar, Bot. Asstt.	2017 – 2020	Q1 Listing of species from published literature as well as herbarium and documentation of 12 species Q2 Documentation of 12 species Q3 Documentation of 12 species. Q4 Documentation of 12 species	
Fumariaceae, Capparaceae to Polygalaceae (C. 50 Spp.)		Dr. Puneet Kumar Scientist B	2017 – 2020	Q1 Listing of species from published literature and herbarium and documentation of 5 species Q2 Documentation of 6 species Q3 & Q4: Documentation of 12 species	

27.	Phytodiversity Assessment of Binsar Wildlife Sanctuary, Uttarakhand. (47 sq. km) New project	Dr. P K. Pusalkar Scientist D	2017 – 2018	Q1 Literature consultation & Herbarium data recording Q2 Herbarium data recording and species identity confirmation Q3 Documentation of the flora Q4 Inventory completion and submission of the flora
28.	Documentation and database of Alien Invasive species of Himachal Pradesh (North-Western Himalaya) New project	Dr. K.S. Dogra, Scientist C	2017 – 2021	Q1 Listing of species from published literature as well as BSD, DD. herbaria Q2 Survey and collection tour to be conducted to the study area to collect alien invasive species. Q3 Identification and documentation of the collected plant species Q4 Herbarium Consultation tour to be conducted at the University Herbaria of Punjab & Himachal Pradesh Total 01 field tour and 01 Herb. Consultation Tour
29.	Floristic Diversity of Sukhna Lake Wildlife Sanctuary, Chandigarh (26 sq. km.) New project	Dr. Kuldip S. Dogra Scientist C Dr. Kumar Ambrish, Scientist D	2017 – 2018	Q1 Literature consultation & Herbarium data recording Q2 Survey and collection tour to be conducted to the study area. Identification and documentation of the collected plant species Q3 Survey and collection tour to be conducted to the study area. Identification and documentation of the collected plant species Q4 Finalisation and submission of manuscript for pictorial flora. Total 02 field tours
30.	Ex-situ Conservation of Endemic, Threatened and Economic Plant Species in the experimental gardens of NRC and documentation of phenological data on flowering and fruiting every month	Dr. Kumar Ambrish Scientist D Dr. B. S. Kholia, Scientist D Sri V. K. Madhukar, Botanical Asstt. Sri P K Deroliya Botanical Asstt.	Ongoing	Documentation of data on phenology of species growing in the botanic garden.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	0	3	3	0	6
Herbarium Consultation Tour	0	2	0	1	3

ARID ZONE REGIONAL CENTRE, JODHPUR

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018		
31.	Flora of Navsari district, Gujarat (ca. 2211 sq. km)	Dr. R. Kumar, Scientist C, Sri V. Maina, Scientist D	2015 – 2020	One Field Tour to the unexplored area of the district in Q1 and Q4. Identification, inventorisation and documentation of specimens collected. Total 02 Field tours		
32.	Flora of Sariksa Tiger Reserve, Alwar, Rajasthan (ca. 866 sq. km)	Sri M.K.Singhadiya, Botanist and Sri Ravi Prasad, Botanical Asstt.	2015 – 2019	One Field Tour to the unexplored area of the district in Q1 and Q3. Identification, inventorisation and documentation of specimens collected. Total 02 Field tours		
33.	Flora of Todgarh-Raoli Wildlife Sanctuary, Rajasthan (ca. 495 sq. km)	Dr. C. S. Purohit, Scientist B	2015 – 2020	One Herbarium study at Dungar College, Bikaner in Q1 and one long duration field tour to the Sanctuary in Q3. Processing, identification inventorisation and documentation of specimens collected in previous tour. Total 01 Field tour and 01 Herb. Consultation Tour		
34.	Ex-situ conservation of RET and economically important species of the Arid region in the Experimental Garden of AZRC and documentation of phenological data on flowering & fruiting.	Sri Vinod Maina, Scientist D, Dr. R. Kumar, Scientist C, Dr. C. S. Purohit, Scientist B, Sri M. K. Singhadia, Botanist, Dr. H. K. Peddi, Sri Ravi Prasad, Both Bot. Asstt.	Ongoing	Plant saplings of RET and economically important species will be collected during various tours for <i>Ex-situ</i> conservation in the Experimental Garden of AZRC and documentation of phenological data on flowering & fruiting of plant species introduced in Desert Botanical Garden .		
35.	Flora of Jam Bughoda Wildlife Sanctuary, Gujarat New Project	Dr. S. L. Meena, Scientist D	2017 – 2020	Literature consultation, herbarium data recording and species identity confirmation. One Field Tour to the study area in Q1 and in Q3. Processing & identification of herbarium specimens collected in tour. Total 02 Field tours		
36.	Vegetation characterization and floristic studies in Bassi Wildlife Sanctuary, Rajasthan using remote sensing and GIS. New Project	Dr. H. K. Peddi, Bot. Asstt. Sri Ramesh Kumar, Bot. Asstt.	2017 – 2020	Literature consultation, herbarium data recording and species identity confirmation. One Field Tour to the study area in Q2 and in Q4 for vegetation type mapping using Remote Sensing and GIS. Processing & identification of herbarium specimens collected in tour. Total 02 Field tours		
37.	GIS mapping of EET (Endemic Endangered Threatened) Species of Rajasthan New Project	Dr. C. S. Purohit, Scientist B Sri Vinod Maina, Scientist D Dr. Ramesh Kumar, Scientist C	2017 – 2020	One Field Tour to the study area each in Q2 and in Q4. Total 02 Field tours		
Nature of Tour		Q1	Q2	Q3	Q4	Annual
Field Tour		3	2	3	3	11
Herbarium Consultation Tour		1	0	0	0	1

In addition to above, Dr. C. S. Purohit, Sri M. K. Singhadiya & Sri Ramesh Kumar will continue the process of augmentation & digitization of BSJO

DECCAN REGIONAL CENTRE, HYDERABAD

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
38.	Inventory of Macrolichen diversity of Odisha State	Dr. Swarnalatha Ginnaram, Botanical Assistant	2015 – 2018	Q1. Continuation of study, identification collected specimens. Photographic documentation of identified species. Documentation of data accumulated so far. Q2. One field tour to Odisha state. Drying, mounting & preparation of herbarium pockets, field data incorporation. Study and identification of collected specimens. Q3. Two Field tours to Odisha. Drying, mounting and preparation of herbarium pockets, field data incorporation. Q4. One herbarium consultation tour to CAL. Finalisation and preparation of manuscript. Total 03 field tours and 01 Herbarium Con. Tour
39.	Flora of Manjeera Wildlife Sanctuary, Telangana <i>(New project)</i>	Dr. L. Rasingam, Scientist D	2017 – 2019	Collection of literature pertains to the flora of study area. Two field tours to study area during Q3 and Q4. Study and identification of collected specimens. Total 02 field tours
40.	Grasses of Telangana State, India <i>(New project)</i>	Mr. S. Nagaraju, Bot. Asst.	2017 – 2020	Collection of literature pertains to the grass flora of Telangana. Two field tours in Q2 and Q4 to different parts of Telangana state for collection of grasses. Study and identification of collected specimens. Total 02 field tours
41.	Flora of Kinnerasani Wildlife Sanctuary, Telangana <i>(New project)</i>	Dr. J. Swamy, Bot. Asst.	2017 – 2020	Collection of literature pertains to the flora Kinnerasani Wildlife Sanctuary, Telangana. Two field tours in Q2 and Q4 to different parts of the WLS for collection of grasses. Study & identification of collected specimens. Total 02 field tours

Nature of Tour	Q1	Q2	Q3	Q4	Annual
Field Tour	0	3	3	3	9
Herbarium Consultation Tour	0	0	0	1	1

WESTERN REGIONAL CENTRE, PUNE

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
42.	Ferns of Karnataka	Dr. A. Benniamin, Scientist D	2014 – 2018	Q1. Processing and Identification of plant specimens collected during earlier field tours. Also nomenclature updating & Identification of Photographs. Q2. One tour will be undertaken to Adichunchanagiri WLS, Arabithittu WLS, Bhadra WLS and Brahmagiri WLS unexplored areas of Karnataka Q3. One tour will be undertaken to Pushpagiri WLS, Talakaveri WLS Shettihalli WLS and Cauvery WLS areas of Karnataka. Q4. One Herbarium tour to be undertaken to critical study of the herbarium specimens to recognised herbaria. Preparation of photo plates, Preparation of distribution maps with the help of QGIS software and finalisation and submission of mss. Total 02 field tours, 01 Herbarium Consultation tour
43.	Taxonomic studies of Microfungi of Sanjay Gandhi National Park, Maharashtra along with its 10 % peripheral area	Dr. Rashmi Dubey Scientist D	2016 – 2020	Two field tours to be undertaken in Q1 and in Q3 to study the phyllospheric micro fungi proliferating in summer season and in rainy season respectively. Isolation, identification, characterisation and description of species collected from different substrates. Scanning electron microscopic studies of important fungal species. One Herbarium Consultation tour in Q4 to any nationalised fungal herbarium for in-depth study. Total 02 field tours, 01 Herbarium Consultation tour
44.	Floristic Diversity of Wan Wildlife Sanctuary (211 sq. km.)	Dr. Priyanka Ingle, Scientist B	2016 – 2020	Two field cum ethnobotanical data collection tours to be conducted in Q2 and Q4 to the study area. Processing, Identification & documentation of collected specimens. One Herbarium Consultation tour in Q4 to recognized herbaria in Maharashtra. Total 02 field tours, 01 Herbarium Consultation tour
45.	Biodiversity assessment of microalgae from thermal springs of Maharashtra	Dr. S. Bhakta, Botanical Assistant	2016 – 2019	Field tours to thermal springs for sample collection in Q1 and in Q3. Microscopical diagnosis of algal samples. Total 02 field tours
46.	Flora of Pushpagiri Wildlife Sanctuary (102.92 km ² .)	Sameer. C. Patil, Bot. Asstt. (under guidance of Dr. P. Lakshmi Narasimhan, Scientist E)	2016 – 2020	Q1. One field tour in May 2017 to unexplored areas of WLS. Q2. One herbarium consultation tour to JCB & FRLHT will be undertaken in the month of July 2017 Q3. One field tour in October 2017 to unexplored areas of WLS for further collection of plant species Q4. Identification and processing of plants collected. Total 02 field tours, 01 Herbarium Consultation tour
47.	Pteridophytic flora of "Pushpagiri Wildlife Sanctuary, Karnataka with 10% periphery	D. Jesubalan Bot. Asstt. (under the guidance of Dr. A. Benniamin, Scientist D)	2016 – 2020	Q1 Processing and Identification of plant specimens collected during earlier field tours. Q2 One field tour to Pushpagiri Wildlife Sanctuary. Around 50 sq.km area will be covered. Q3 One field tour to Pushpagiri Wildlife Sanctuary. Around 50 sq.km unexplored area will be covered. Q4 Processing and Identification of plant specimens collected during earlier field tours. Total 02 field tours
48.	Seed morphology and Cytotaxonomy of some selected Orchids of Northern Western Ghats New Project	Neelima Naveen Bot. Asstt.	2017 – 2020	Q1. Survey of literature, sampling of the seeds available in the Herbarium (BSI), Orchidarium and museum of WRC, Pune. Q2. SEM and Light microscopy of the available specimens. Q3. One field tour in the month of October to Northern Western Ghats. Cytotaxonomic studies of collected specimens. Q4. Interpretation of the data generated by SEM and Light microscopic studies. Total 01 field tour

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018		
49.	Flora of Biligiri rangaswamy Temple Wild Life Sanctuary, Karnataka (ca. 539 sq.km)	Dr. J. Jayanthi, Scientist D	2013 – 2017 <i>(extended up to March, 2018)</i>	Q1. Processing and identification of specimens collected in last field tour. One HCT tour to recognized herbaria. Q2. Preparation of descriptions of identified species. Filling of herbarium label data of all the mounted specimens. Q3. Preparation of manuscript and point distribution maps for endemic and threatened species using GPS coordinates. Q4. Compilation and submission of final project report. 01 Herbarium Consultation tour		
50.	An Assessment of Orchid diversity of Central Western Ghats: Goa	Dr. J S. Jalal, Scientist D	2015 – 2017 <i>(extended up to March, 2018)</i>	Project extended without any additional financial requirement in the form of tour etc. Submit the report by March, 2018.		
51.	Floristic survey of Someshwara Wildlife Sanctuary, Karnataka (88.40 sq.km)	Dr. C.R. Jadhav, Botanist	2015 – 2017 <i>(extended up to March, 2018)</i>	One field tour to be conducted in Q2 to the unexplored areas of WLS. Processing and identification of plants collected. Finalization and submission of manuscript. Total 01 field tours		
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tour		3	4	6	1	14
Herbarium Tour		1	1	0	3	05

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Sr. No.	Name of the Project	Name of executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
52.	Recording of Phenology of tree species of the Dhannikhari Experimental Garden-cum-Arboretum	Dr. Lal Ji Singh, Scientist D	Ongoing	Recording of Phenology of tree species of the Dhannikhari Experimental Garden-cum-Arboretum
53.	<i>Ex-situ</i> conservation of RET species of A & N Isls. and Collection, introduction and multiplication of Orchids at Dhanikhari Exp. Garden cum Arboretum	Dr. Sanjay Mishra, Scientist B	Ongoing	Maintenance of previous collections and raising of nursery. One field tour to Middle Andaman in Q2 and in Q4 for collection of seeds and seedlings of RET species. Total 02 Field Tour
54.	Flora of Kyd, Pitman & James Islands, South Andaman	Dr. S. Mishra, Scientist 'B', Mr. C.P. Vivek, Botanical Ast. Mr. Gautam Ekka, Sr. Pres. Ast.	2015 – 2018	Q1. Identification and documentation of collected specimens. Q2. Identification and documentation of collected specimens. Q3. One field tour to be conducted to the underexplored areas. Identification and documentation of collected specimens. Q4. One Herbarium Consultation Tour to be conducted to CAL. Finalisation and Submission of manuscript Total 01 Field Tour and 01 Herbarium Consultation Tour
55.	Revision of the lichen family Pyrenulaceae in India New Project	Dr. T.A.M. Jagadeesh Ram, Scientist-D	2017 – 2022	Q1 Literature survey and listing of genera and species. Q2 Literature survey and listing of genera and species. Q3 One field tour to Arunachal Pradesh and Meghalaya. One Herbarium consultation tour to BSI, ERC, Shillong Q4 Identification of the collected specimens. Total 01 Field tour and 01 Herbarium Consultation Tour
56.	Collection and introduction of seeds and seedlings of 23 tree species, and Rattans in Dhanikhari Experimental Garden cum Arboretum (DEGCA) New Project	Dr. Lalji Singh Scientist D	2017 – 2020	Q2 One field tour to Middle Andaman for collection of seeds and seedlings of rare threatened and endemic tree species, Zingibers and Rattans Total 01 Field tour

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	0	2	2	1	5
Herbarium Consultation Tour	0	0	1	1	2

SOUTHERN REGIONAL CENTRE, COIMBATORE

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018		
57.	Floristic studies in Kodaikanal Wildlife Sanctuary, Tamil Nadu, India Area: 5,468 Km ²	Dr. K. A. A. Kabeer, Scientist D Mr. A. Ravi Kiran, Bot. Asst.	2015 – 2020	Processing and identification specimens collected earlier. Three field tours to the unexplored areas of WLS in Q2, Q3 and Q4. Identification, documentation and inventorisation of collected specimens. One consultation tour to NRSC, Hyderabad in Q4. Total 03 field tours and 01 Consultation tour subjected to submission of final manuscript of 'Study of Caryopsis in Eragrostis Sporobolus and Tripogon genera of Poaceae using SEM' by Dr. K.A.A Kabeer		
58.	Flora of Kanniyakumari Wildlife Sanctuary, Tamil Nadu (402.39 sq. km.)	Dr. J. H. Franklin Benjamin, Scientist B & Shri. Rakesh G Vadhyar, Bot. Asstt.	2016 – 2021	Processing and identification specimens collected earlier. Three field tours to the unexplored areas of Kanniyakumari Wildlife Sanctuary in Q1 and Q3. Identification, documentation and inventorisation of collected specimens. Total 02 field tours		
59.	Floristic Assessment of Meghamalai Wild Life Sanctuary, Tamil Nadu. (269 sq. km.)	Dr. C. Murugan Scientist D and Shri S. Arumugam Botanical Asst.	2016 - 2020	Processing and identification specimens collected earlier. One field tour to the unexplored areas of Meghamalai WLS in each quarter. Collection and processing of specimens Total 04 field tours		
60.	Cyperaceae of Tamil Nadu	Dr. C. Murugan, Scientist D Dr. J. V. Sudhakar Botanical Asstt. Sri S. Armugam, Botanical Asstt.	2015 – 2020	Processing and identification specimens collected earlier. Three field tours to the unexplored areas of Tamil Nadu for collection of plants belonging to Cyperaceae family in Q1, Q2 and Q4. Processing and identification specimens collected. Total 03 field tours subjected to submission of final mss. of 'Seed morphology of Ficus L. using SEM' by Dr. Sudhakar		
61.	Study of Nutlets of tribe Cyperae and Fimbristyledeae from south India using SEM (c. 160 species)	Dr. J.V. Sudhakar, Bot. Asst. Ms. R. Mehaladevi Sr. Pres. Asstt. Ms. Ananthalakshmi, Sr. Pres. Asstt.	2016 - 2019	50 species to be studied in 2017 – 18. Note 1: Dr. Sudhakar is also to submit of final manuscript of 'Seed morphology of Ficus L. using SEM' at the earliest Note 2: Dr. Sudhakar and Ms. Ananthalakshmi are also to submit final mss. of Flora of Kerala – Vol 6 (Lemnaceae to Potamogetonaceae)		
62.	Assessment of Plant diversity in Cauvery North Wildlife Sanctuary, Tamil Nadu (New Project)	Dr. R. Manikandan, Scientist D & Dr. S. Pradeesh, Bot. Asstt.	2017 – 2021	Q1. Literature and Herbarium Consultation Q2. Survey and collection tour to the study area Q3. Identification of collected specimens Q4. Survey and collection tour to the study area Total 02 Field tour and 01 Consultation tour		
63.	Seaweed Flora of Goa coast New Project	Dr. M. Palanisamy, Scientist D & Mr. S. K. Yadav, Bot. Asst.	2017 – 2019	Reference collection and identification of seaweed locations in Goa coast during first quarter. One field tour in each of the 2 nd and 3 rd 4 th quarter. One Herbarium consultation tour to National Institute of Oceanography (NIO), Goa in 4 th quarter Total Field tours: 3; Herbarium Consultation tours: 1		
64.	Study of Pollinia of South Indian Orchids using SEM: Phase II New Project	Dr. S. Kaliamoorthy Scientist D & Dr. T. Saravanan, Bot. Asstt.	2017-2020	Collection of pollinia from the flowers available at the NOEG, Yercaud and study 5 spp of pollinia using SEM in each of the four quarters		
65.	<i>Ex situ</i> conservation of Endemic, Endangered and Threatened plants of the region and documentation of phenology of species in garden.	Dr. S. Kaliamoorthy, Scientist D Dr. M.Y. Kamble, Scientist D Dr. T. Saravanan, Bot. Asst. Shri. B.S. Elango, Bot. Asstt.	Ongoing	<ul style="list-style-type: none"> Collection of orchids from Mukurthi National Park, Tamil Nadu by Dr Kaliamoorthy: Two <i>ex-situ</i> conservation tours in Q2 and Q3 Collection, introduction and multiplication of ten endemic trees species from Kalakkad Mundanthurai Tiger Reserve, Tamil Nadu and Agasthyalai Biosphere Reserve, Kerala by Dr. M.Y. Kamble & Shri B.S. Elango: Two <i>ex-situ</i> conservation tour in Q2 and Q3 Total 04 Ex-situ conservation tours subject to submission of final mss. of Flora of Kerala – Vol 6 (Bromiliaceae to Burmanniaceae (excl. Dioscoreaceae & Amaryllidiaceae) by Drs. M.Y. Kamble and T. Saravanan. Note: Dr. Kaliamoorthy and Sr. Sarvanan are also to complete the unfinished work of project namely 'Study of Pollenia of South Indian Orchids using SEM'		
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tour		3	5	4	5	17
Herbarium Consultation Tour		1	0	0	1	2
Ex-situ conservation Tour		0	2	2	0	4

AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018												
66.	Enrichment of medicinal plant section (Charak Udyan) of AJC Bose Indian Botanic Garden through survey and introduction of medicinal plants.	Dr. S. P. Panda, Scientist B	2015 – 2018	Two <i>ex-situ conservation Tours</i> in Q2 and Q4 to Western Ghats to collect 20 medicinal plants from each tour. Total 02 Ex-situ conservation Tours subject to submission of final report of project namely 'Development of Division 25 of AJC Bose IBG'.												
67.	GIS phyto-mapping & digitization of shrubs and trees in AJC Bose Indian Botanic Garden	Dr. A. Pramanik, Sci.E Dr. C.M. Sabapathy, Botanist Dr. B.K. Singh, BA	2014 – 2017 (Extrd. upto 2018)	To prepare a data base access to different living palms of AJCBIBG including their phenology and economic uses.												
68.	Collection, documentation & ex situ conservation of Aromatic plants of India New Project	Dr. M. U. Sharief, Scientist E & Dr B.K. Singh, Bot. Asst.	2017 – 2020	Two <i>ex-situ conservation Tours</i> in Q2 and Q4 to Meghalaya, and to Arunachal Pradesh respectively to collect 15 aromatic plant species from each tour. Total 02 Ex-situ conservation Tours subject to submission of final report of project namely 'Collection, Introduction & Ex-situ Conservation of Rare and Endemic Orchids of NE India'												
69.	Herbaceous Flora of AJC Bose IBG, Howrah (Monocots excl. Cyperaceae, Poaceae) New Project	Dr. B. K. Singh Bot. Asstt.	2017 – 2019	The work on the documentation and inventorisation of Herbaceous Flora of AJC Bose Indian Botanic Garden to be initiated. However, Dr. Singh is also to submit the final report of the project namely ' <i>Dicot Herbaceous Flora and weeds of AJCBIBG</i> '												
70.	Introduction of Mangroves Associate plants in AJC Bose Indian Botanic Garden, Howrah New Project	Dr. B. K. Singh Bot. Asstt.	2017 – 2019	Two <i>ex-situ conservation Tours</i> in Q2 and Q4 to Sunderban Biosphere Reserve to collect 10 mangrove plant species from each tour. Total 02 Ex-situ conservation Tours subject to submission of final report of project namely 'Dicot Herbaceous Flora and weeds of AJCBIBG'												
71.	A re-assessment and re-validation of <i>Phoenix loureiroi</i> Kunth and its variants in India. New Project	Dr. S. S.Hameed, Scientist D	2017 – 2019	A thorough study of this species in India by assessing its morphological and ecological variations and examining the herbarium collections in regional Centers of BSI and CAL is to be done for a re-assessment and re-validation study and as well as to clear the ambiguity on the species. Live plants, seeds, seedlings etc. of the variants are also to be collected, introduced and conserved in AJCBIBG for future reference and study. Total two ex-situ conservation Tours in Q2 and Q4 in different parts of India subject to submission of final report of the project namely 'Collection & Introduction of Indigenous Palms of India'												
72.	Documentation of Woody Climbers of AJCBIBG New Project	Smt Nita Sarkar, Botanist & Dr B.K. Singh, B.A.	2017 – 2019	The work on the documentation of woody climbers of AJC Bose Indian Botanic Garden to be done division wise along the recording of Lat. Long. Data.												
73.	Study of Microalgae and monitoring of water Quality of Lerm Lake of AJCBIBG New Project	Dr. Pratibha Gupta, Scientist E	2017 – 2019	In addition to the work on this new project, Dr. (Mrs.) Gupta is also to complete the unfinished work of the project namely Epiphytic Algal Flora of AJC Bose Indian Botanic Garden, Howrah by March 2018												
74.	Introduction and Ex-situ conservation & monitoring of Indigenous plants of India at AJCBIBG New Project	All working Scientists and Botanists of AJC Bose Indian Botanic Garden, Howrah	Ongoing	Proper item-wise work allotment should be mapped by the HoO, AJCBIBG for the individual Scientist/ Botanist/Botanical Assistant for the execution of the project.												
<table border="1"> <thead> <tr> <th>Nature of Tour</th> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> <th>Annual</th> </tr> </thead> <tbody> <tr> <td><i>ex-situ</i> Conservation Tour</td> <td>0</td> <td>4</td> <td>0</td> <td>4</td> <td>8</td> </tr> </tbody> </table>					Nature of Tour	Q1	Q2	Q3	Q4	Annual	<i>ex-situ</i> Conservation Tour	0	4	0	4	8
Nature of Tour	Q1	Q2	Q3	Q4	Annual											
<i>ex-situ</i> Conservation Tour	0	4	0	4	8											

CENTRAL NATIONAL HERBARIUM, HOWRAH

Sr. No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
75.	Flora of Bihar Vol. III (Cuscutaceae – Ceratophyllaceae) (33 families & c. 674 spp.)	Dr. V. Sampath Kumar, Scientist D Dr. K. Karthigeyan, Scientist C		Dr. V. Sampath Kumar, Scientist D <i>Lamiaceae</i> (submission of final mss. of c. 75 spp.) Dr. K. Karthigeyan, Scientist C <i>Acanthaceae</i> (submission of final mss. of c. 94 spp.), Dr. (Ms.) Pushpa Kumari, Scientist C <i>Bignoniaceae</i> (submission of final mss. of c.29 spp.)
76.	Flora of Jharkhand Vol. III (Cuscutaceae – Ceratophyllaceae) (33 families & c. 674 spp.)	Dr. (Ms.) Pushpa Kumari, Scientist C Dr. O.N. Maurya, Scientist B Dr. S. Bandyopadhyay, Scientist B Dr. Mahua Pal, Bot. Asstt.	2015 – 2018	Dr. O.N. Maurya, Scientist B <i>Cuscutaceae, Scrophulariaceae, Orobanchaceae, Lentibulariaceae, Gesneriaceae, Pedaliaceae</i> (submission of final mss. of c. 98 spp.) Dr. (Mrs.) Mahua Pal, Botanical Assistant, <i>Verbenaceae</i> (submission of final mss. of c. 45 spp.) • 01 Herb. Con. tour to NBRI by Dr. V.S. Kumar in Q4 • 01 field tour to Bihar/Jharkhand by Dr. P. Kumari in Q3 subject to submission of final manuscript of 'Taxonomic Revision of Bambusoideae in India'
77.	Flora of Betla National Park, Latehar, Jharkhand	Sri Parth Pratim Ghoshal, Botanist	2015 – 2019	Identification and documentation of the previously collected specimens. One field tour of 15 days to the unexplored area in Q2 and in Q4. Identification of the collected specimens Total 02 Field Tours subject to submission of final manuscripts of Asteraceae (c. 152 spp.) under Flora of Bihar & Jharkhand, Vol. II
78.	Angiospermic flora of Neora valley national park, Darjeeling district, West Bengal	Dr. Vinay Ranjan, Scientist-'D' Sri Anant Kumar, B.A. Sri Gopal Krishna, B.A.	2016 – 2021	Identification and documentation of the previously collected specimens. One field tour of 15 days in Q2 and in Q4. Identification of collected specimens Total 02 Field Tours subject to submission final mss. of Rubiaceae and Cucurbitaceae under Flora of Bihar & Jharkhand, Vol. II by Dr. Vinay Ranjan and Dr. Gopal Krishna respectively
79.	Assessment of floristic diversity in Barailla lake Salim Ali Jubba Sahni Bird Sanctuary, Vaishali, Bihar	Dr. Kumar Avinash Bharati, Scientist B	2016 – 2018	One field tour of 15 days in Q2. Identification and documentation of the previously collected specimens. Finalisation and submission of mss. Total 01 Field Tour subject to submission of final manuscripts of Asteraceae (c. 152 spp.) under Flora of Bihar & Jharkhand, Vol. II
80.	Taxonomic revision of <i>Impatiens</i> L. (Balsaminaceae) of Sikkim & Darjeeling Himalayas (New Project)	Dr. Rajib Gogoi, Sci. D Anand Kumar, Bot. A.	2017 – 2020	Literature consultation & Herbarium data recording. Field tour to the study area in Q2. Identification and documentation of the collected specimens. One Herb. Consultation tour to SHRC and ERC in Q3. Total 01 Field Tour & 01 Herb. Con. Tour subject to submission of final manuscripts of • <i>Styliidiaceae, Campanulaceae, Lobeliaceae, Sphenocleaceae, Vacciniaceae, Sapotaceae Plumbaginaceae, Primulaceae, Myrsinaceae, Theophrastaceae (c. 37 spp.) under Flora of Bihar and Jharkhand, Vol. II by Dr. Rajib Gogoi</i> • <i>Caricaceae, Begoniaceae, Cactaceae, Aizoaceae, Molluginaceae under Flora of Bihar and Jharkhand, Vol. II by Sri Anand Kumar</i> • <i>Study of Impatiens of Arunachal Pr. By Dr. Gogoi</i>
81.	Flora of Udaipur Wildlife Sanctuary West Champaran, Bihar (8.86 km ²) (New Project)	Dr. O. N. Maurya, Scientist C Anand Kumar, Bot. A. Saurabh Sachan, Bot. A	2017 – 2019	Study of relevant literature published earlier on this area. One field tour in Q3. Identification of collected specimens. Total 01 Field Tour subject to submission of final manuscripts of Asteraceae (c. 152 spp.) under Flora of Bihar & Jharkhand, Vol. II by Anand and Saurabh

Sr. No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
82.	Revision of the genus <i>Gastrochilus</i> D. Don (Orchidaceae) in India (New Project)	Dr. Avishek Bhattacharjee, Scientist B	2017 – 2020	Study of relevant literature published earlier on this area. One field tour in Q4 Arunachal Pradesh, Meghalaya. One Herbarium Consultation Tour to ASSAM in Q4. Identification of collected specimens. Total 01 Field Tour and 01 Herbarium Consultation tour subject to submission of final manuscript of Apiaceae, Araliaceae, Alangiaceae under Flora of Bihar & Jharkhand, Vol. II

In addition to the above during 2017 – 18:

1. Dr. V. P. Prasad, Scientist D is to finalise the manuscript of 'Revision of the genus *Fimbristylis* of family Cyperaceae under Flora of India'. His Herbarium Consultation Tour to BSA, BSD and DD in one go in Q3 is approved.
2. Dr. Subir Bandyopadhyay, Sri Vijay Mastakar and Sri Shyam Vishwa are also to finalise the mss. of *Lythraceae, Punicaceae, Onagraceae, Trapaceae, Turneraceae, Passifloraceae* under *Flora of Bihar & Jharkhand, Vol. II*
3. Drs. V. S. Kumar, Sci. D and Dr. Subir Bandyopadhyay, Sci. B will assist the Flora of India Cell to update, edit and finalise mss. of families viz., Melastomataceae (incl. Memecylaceae), Lythraceae, Aplingiaceae, Sonneratiaceae, Crypteroniaceae, Punicaceae, Trapaceae, Turneraceae, Passifloraceae, Caricaceae, Cucurbitaceae, Begoniaceae, Datisceae (incl. Tetramelaceae) under *Flora of India, Vol. X*. If the manuscripts are not available, then the matter should be brought to the notice of Director, BSI in writing.
4. Dr. Kumar Avinash Bharati, Scientist- 'B', Sri P.P. Ghoshal, Botanist & Sri Anand Kumar, Bot. Asstt. will continue the work on the Scanning and data basing of authentic specimens of species of Angiosperms occurring in India and available at CAL
5. Dr. Kumar Avinash Bharati, Scientist B, Dr. S. Bandyopadhyay, Scientist B, Sri P.P. Ghoshal, Botanist and Sri Anand Kumar, Bot. Asstt. will continue the listing of Type specimens at Central National Herbarium (CAL)

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	0	4	2	3	9
Herbarium Consultation Tour	0	0	2	2	4

CENTRAL BOTANICAL LABORATORY, HOWRAH

Sr. No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2016 – 17		
83.	Cytological investigation of some selected angiosperms of AJCBIBG, Howrah	Smt. Monika Mishra, Botanical Assistant	2015 – 2018	Collection of plant material and study of chromosomal count (meiotic/ mitotic) of 10 selected species. Finalisation and submission of manuscript		
84.	Survey and documentation of economical and ethnobotanical uses of endemic trees of India	Smt. Sujana, K.A. Scientist 'C' Sri R. Saravanan, Bot. Asstt.	2016 – 2019	Q1. Processing of herbarium specimens, identification, documentation and compilation of data collected during previous tours. One field tour to southern Western Ghats (Tamil Nadu & Kerala) for conducting survey and collecting uses. Q2. Processing of herbarium specimens, identification, documentation and compilation of data collected during previous tours. One field tour to Northern Western Ghats (Karnataka, Maharashtra) for conducting survey and collecting information. Q3. Processing of herbarium specimens, identification, documentation and compilation of data collected earlier. One field tour to North East India (Arunachal Pradesh, Assam) for conducting survey and collecting information. Q4. Processing of herbarium specimens, identification, documentation and compilation of data collected earlier. One field tour to South India (Andhra Pradesh, Telegana) for conducting survey and collecting information. Total 04 field tours		
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tour		1	1	1	1	4

INDUSTRIAL SECTION, INDIAN MUSEUM, KOLKATA

Sr. No	Name of the Project		Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
85.	Collection of economic plant materials for enrichment and replacement of exhibits of the Botanical gallery		Dr. A.K. Sahoo, Scientist D	Ongoing	One field tour to Bargarh & Bolangir districts of Western Odisha in Q2 for collection of 40-50 samples of plant materials. One consultation tour to NBPGR, PUSA campus, Delhi in Q4 for collection of 30-40 cultivated varieties of cereals, millets, pulses, oilseeds etc. for display and enrichment of Botanical Gallery. Total 01 Field Tour & 01 Con. tour In addition to the above Dr. Sahoo is also to complete the work of the Interpretation of family Moraceae & Myrtaceae in Icones Roxburghianae
			Mrs. G. Chaudhury, Botanist Mr. B. C.Dey, Sr. Pres. Asstt. Mr. S. K.Sharma, Sr. Pres. Asstt.	Ongoing	One tour in Q4 to Birbhum District of West Bengal for collection of ethno medicinal/ botanical materials for enrichment of the Botanical Gallery. Total 01 Field Tour
86.	Interpretation of Roxburgh's Icones	Family: Poaceae	Dr B.K. Sinha, Scientist F Dr M. Bhaumik, Scientist D Ms. S. Datta, Sr Presv. Asstt.	2017 – 2019	45 entries to be interpreted. In addition to this Dr. Bhaumik is also to complete the interpretation of family Zingiberaceae in Icones Roxburghianae
		Family: Ebenaceae	Dr M. Bhaumik, Scientist-D Shri D. L. Shirodkar, Botanist Ms. S. Datta, Sr Presv. Asstt.	2017 – 2018	About 31 entries to be interpreted. In addition to this Ms. Datta is also to complete the interpretation of family Zingiberaceae in Icones Roxburghianae family Convolvulaceae and Cucurbitaceae in Icones Roxburghianae
87.	Listing & Identification of 8000 Dicot Herbarium Specimens at BSIS		Mrs. G. Chaudhury, Botanist Mr. B. C. Dey, Sr. Pres. Asstt. Mr.S. K. Sharma, Sr. Pres. Asstt.	2016 – 2019	Ca.3000 specimens of diocot to be documented in 2017 – 18
88.	Nomenclature update of 9171 digitized herbarium specimens at BSIS		Dr. Manas Bhaumik, Scientist D Dr. A. K. Sahoo, Scientist D Mrs. G. Chaudhury, Botanist Ms. K. Pagag, Bot. Asstt. Ms. S. Datta, Sr. Pres. Asstt. Mr. B. C. Dey, Sr. Pres. Asstt. Mr. S. K.Sharma, Sr. Pres. Asstt.	2016 – 2018	To update 4171 digitised herbarium specimens with valid botanical names, synonyms and basionyms in 2017 – 18

- In addition to the above Dr. Manas Bhaumik, Mr. B. C. Dey, and Mr.S. K. Sharma to complete the unfinished work of the 'Listing and Identification of Monocot Herbarium Specimens at BSIS' which is scheduled to be completed by March 2017

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	0	1	0	1	2
Consultation Tour	0	0	0	1	1

PHARMACOGNOSY UNIT, HEADQUARTERS

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2016 – 2017
89.	Pharmacognostic studies on Indian Cycads	Dr. A. B. D. Selvam, Scientist D	2016 – 2021	<p>Q1 Detailed literature survey on ornamental/medicinal Cycads that are included in the Indian Negative list of Exports to find out the lacunae in the existing literature. One field tour to collect fresh plant materials (leaves and male cone) from wild/cultivated sources from different parts of India and confirmation of identity of the collected plant specimens by consulting floras (District, State or Nat. flora) & BSI herbaria</p> <p>Q2 To collect fresh plant materials (leaves and male cone) from the Cycads conserved in AJC Bose IBG campus</p> <p>Q3 One field tour to collect fresh plant materials (leaves and male cone) from wild/cultivated sources from different parts of India and confirmation of identity of the collected plant specimens by consulting floras (District, State or Nat. flora) & BSI herbaria</p> <p>Q4 Continuation of carrying out a detailed pharmacognostic study of the earlier three cycad species using the collected specimens (leaves & male cones) and to prepare a comprehensive and comparative data.</p>

Nature of Tour	Q1	Q2	Q3	Q4	Annual
Field Tour	1	0	0	1	2

CRYPTOGAMY UNIT, HEADQUARTERS

Sr No.	Name of the Project	Name of the scientist	Tenure	Quantifiable deliverables (targets) for 2017 – 2018
90.	Studies on wild mushrooms of east and south Sikkim (<i>except Agaricaceae, Suillaceae, Hygrophoraceae, Boletaceae, Cantharellaceae</i>)	Dr. Kanad Das, Scientist D	2014 – 2019	<ul style="list-style-type: none"> Survey & Collection: One macrofungal survey to East and South Districts of Sikkim will be undertaken in Q3. Identification: Ca. 30 spp. of wild mushrooms to be identified Documentation: Ca. 10 macro- and micromorphological illustrations to be finalized. SEM studies: Ornamented spores will be further studied under scanning electron microscope. <p>Total 01 Field Tour</p>
91.	Revision of family <i>Metzgeriaceae</i> in India (ca. 26 spp.) and databasing liverworts and hornworts specimens in CAL	Dr. D. Singh, Scientist C	2015 – 2018	Identification, Camera lucida illustrations, microphotography, SEM study, characterization of 11 species, data-base of the CAL specimens and study of the type/authentic specimens obtained from different National and International herbarium. Preparation of line drawing plates, Microphotoplates, SEM plates and compilation of all data of CAL specimens. Finalisation & submission of mss.
92.	Liverworts and Hornworts Flora of Darjeeling District, West Bengal	Dr. (Ms.) Monalisa Dey, Scientist B	2016 – 2021	Processing, preservation, identification, illustration, microphotography of previously collected specimens. One field tour to be undertaken in Q3. SEM studies of spores whenever available. Total 01 Field Tour
93.	Hot spring of Rajgir and Munger, Bihar (86 Sq. Km.)	Dr. R. K. Gupta, Scientist D	2017 – 2020	Q2 One field tour to the study area for collection of algal samples Total 01 Field Tour

Nature of Tour	Q1	Q2	Q3	Q4	Annual
Field Tour	0	0	3	0	3

PUBLICATION SECTION, HEADQUARTERS

Sr. No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2016 – 2017
94.	Interpretations of Roxburgh icons in respect to current nomenclature: Family Leguminosae	Dr. Debasmitta Dutta Pramanik, Scientist B & Dr. S.S. Dash, Scientist D	2015 – 2018	Listing of taxa of the family leguminosae from authentic and current literature. Listing of taxa from Roxburgh icons. Study of herbarium specimens deposited in CAL and BSIS. Interpretation of 97 species of the family leguminosae

PLANT CHEMISTRY UNIT, HEADQUARTERS

Sr No	Name of the Project	Name of executing scientist	Tenure	Proposed Quantifiable deliverables (targets) for 2017 – 2018
95.	Chemical composition & nutritive value of Wild Edible Plants of NE Region	Dr. Tapan Seal, Scientist C	2008 – 2018	Nutritive values, mineral estimation and antioxidant profile (Total phenolic content, DPPH radical scavenging activities, ABTS assay, flavonoid content, flavonol content and reducing power) of 20 plant species to be carried out. Quantitative estimation of flavonoid like Aesculin, Catechin, Rutin, Quercetin, Coumarin, Kaempferol, Luteolin, Naringin, Naringenin, Apigenin, Myricetin, and phenolic acid like Gallic acid, Protocatechuic acid, Gentisic acid, Vanilic acid, p-Hydroxybenzoic acid, Chlorogenic acid, Ellagic acid, Ferulic acid, salicylic acid, Caffeic acid, Syringic acid, p-Coumaric acid and Sinapic acid content in 10 wild edible plants to be carried out using HPLC. Water soluble vitamin like C, B1, B2, B3, B5, B6, B9 and B12 content of 10 plants to be carried out by HPLC. Protective action of wild edible plants against Oxidative DNA damage by Comet assay. One field tour to be undertaken in Q3 to North East India Total 01 Field Tour

Nature of Tour	Q1	Q2	Q3	Q4	Annual
Field Tour	0	0	1	0	1

SUMMARY OF TOURS

RC/Unit	Field Tour				Herbarium Consultation Tour				Ex-situ Conservation Tour				TOTAL
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
APRC	3	1	0	0	0	0	1	0	0	0	0	0	5
ERC	1	4	3	2	0	0	1	0	0	1	0	0	12
SHRC	0	0	0	0	0	0	0	0	0	0	0	0	0
CRC	1	2	1	0	0	0	0	0	0	2	0	0	6
BGIR	0	0	0	0	0	0	0	0	0	0	0	0	0
NRC	0	3	3	0	0	2	0	1	0	0	0	0	9
AZRC	3	2	3	3	1	0	0	0	0	0	0	0	12
WRC	3	4	6	1	1	1	0	3	0	0	0	0	19
DRC	0	3	3	3	0	0	0	1	0	0	0	0	10
SRC	3	5	4	5	1	0	0	1	0	2	2	1	24
ANRC	0	2	2	1	0	0	1	1	0	0	0	0	7
AJCBIBG	0	0	0	0	0	0	0	0	0	4	0	4	8
CNH	0	4	2	3	0	0	2	2	0	0	0	0	13
CBL	1	1	1	1	0	0	0	0	0	0	0	0	4
ISIM	0	1	0	1	0	0	0	1	0	0	0	0	3
PHARM	1	0	1	0	0	0	0	0	0	0	0	0	2
CRYPTO	0	0	3	0	0	0	0	0	0	0	0	0	3
PL CHEM	0	0	1	0	0	0	0	0	0	0	0	0	1
PUBL.	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	15	33	33	20	3	3	5	10	0	9	2	5	138