

ANNUAL RESEARCH PROGRAMME OF BOTANICAL SURVEY OF INDIA ON FLORA OF INDIA (2019-20 AND 2020 – 21)

DICOTYLEDONS

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
1.	<u>Flora of India, Vol. 8</u> 3 Families: <i>Rosaceae, Chrysobalanaceae, Neurardaceae</i> ca 480 Species <u>Team Leader:</u> Dr S. S. Dash, Scientist E <u>Team Members:</u> ▪ Dr. Debasmita Dutta Pramanick, Scientist C ▪ Sri Sanjay Kumar, Botanist	2019 – 2021	Q1. Detailed literature survey to be done and 55 species to be described Q2. Detailed literature survey to be done and 55 species to be described Q3. One Herbarium Consultation Tour to Kashmir University and Forest Research Institute by Dr. S. S. Dash. 55 species to be described Q4. One Herbarium Consultation Tour to NBRI Lucknow by Dr. Debasmita. 55 species to be described. <u>Species-wise work allotment:</u> ▪ Dr S. S. Dash: 50 species ▪ Dr Debasmita D Pramanick: 120 species ▪ Sanjay Kumar: 50 species Total: Two Herbarium Consultation Tours
2.	<u>Flora of India, Vol.10</u> 14 Families: <i>Melastomataceae,</i> <i>Lythraceae,</i> <i>Altingiaceae,</i> <i>Sonneratiaceae,</i> <i>Crypteroniaceae,</i> <i>Punicaceae,</i> <i>Onagraceae,</i> <i>Trapaceae,</i> <i>Turneraceae,</i> <i>Passifloraceae,</i> <i>Caricaceae,</i> <i>Curcubitaceae,</i> <i>Begoniaceae,</i> <i>Datiscaceae</i> ca 80 Genera and ca 475 species <u>Team Leader:</u> ▪ Dr B. K. Sinha, Scientist F <u>Team Member:</u> ▪ Dr. S. S. Dash, Scientist E <u>Manuscripts available</u> Melastomataceae (Dr. G. S Giri) Memecylonaceae (Dr. A. Pramanik & Dr. Moumita) Altingiaceae (Dr. M. Murugesan) Sonneratiaceae (Fascicle 22) Crypteroniaceae (Dr. M. Murugesan) Punicaceae (Dr. M. Murugesan) Onagraceae (Dr. Tapas Paul) Trapaceae (Dr. P. J. Parmer) Turneraceae (Dr. Tapas Paul) Passifloraceae (Dr. P. M. Padhye) Caricaceae (Dr. M. Murugesan) Cucurbitaceae (Fascicle 11) Begoniaceae (Dr. Ammaudin) Datiscaceae incl. <i>Tetramelac</i> (Dr. Sanjappa) Datiscaceae (Dr. M. Murugesan) Lythraceae (Dr. T. Mathew, Dr. M.P. Nayar & Dr. V. Sampath Kumar)	2019 – 2020	Q1. Checklist to be prepared and nomenclature to be updated. 120 species to be described. Q2. Checklist to be prepared and nomenclature to be updated. 120 species to be described. Q3. Checklist to be prepared and nomenclature to be updated. 120 species to be described. One Herbarium Consultation Tour to be conducted at BSI, SRC, Coimbatore Q4. Final manuscript to be submitted Total: One Herbarium Consultation Tour <u>N. B.:</u> ▪ Families Cucurbitaceae and Lythraceae will be updated by Dr. B. K. Sinha, Dr. S. S. Dash and Dr. V. Sampath Kumar. ▪ Family Begoniaceae will be updated by Dr. S. S. Dash

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3.	<u>Flora of India, Vol. 11</u> 10 Families: <i>Cactaceae</i>, <i>Aizoaceae</i>, <i>Molluginaceae</i>, <i>Apiaceae</i>, <i>Araliaceae</i>, <i>Cornaceae</i>, <i>Alangiaceae</i>, <i>Nyssaceae</i>, <i>Caprifoliaceae</i>, <i>Adoxaceae</i> ca 94 Genera and ca 375 species <u>Team Leader:</u> Dr. C. Murugan, Scientist E <u>Team Members:</u> - Dr. W. Arisdason, Scientist D - Dr. M. Murugesan, Scientist B - Dr. Manikandan, Scientist D - Dr. Sujana K. A., Scientist D <u>Manuscripts available:</u> <i>Cactaceae</i> (Dr. R. P. Pandey) <i>Aizoaceae</i> (Dr. E. Vajravelu) <i>Molluginaceae</i> (Dr. E. Vajravelu) <i>Apiaceae</i> (Dr P.K. Mukherjee) <i>Araliaceae</i> (Ju Jen & Prof. A.K. Pandey) <i>Caprifoliaceae</i> (Dr. M. Gangop. & Dr. G. S Giri)	2019 – 2020	- Dr. W. Arisdason, Scientist D: <i>Cactaceae</i>, <i>Aizoaceae</i> and <i>Molluginaceae</i>. ca. 20 species and 02 varieties under 09 genera. - Dr. M. Murugesan, Scientist B: <i>Apiaceae</i> (Part 1). ca. 155 species under 12 genera; one herbarium consultation tour to CNH in Q2. - Dr. R. Manikandan, Scientist D: <i>Apiaceae</i> (Part 2). ca. 136 species under 63 genera; one herb. consultation tour to BSI-NRC and FRI in Q3. - Dr. C. Murugan, Scientist E and Dr. W. Arisdason, Scientist D: <i>Araliaceae</i>: 66 species and 13 varieties under 14 genera - Dr. Sujana, K.A., Scientist D: <i>Cornaceae</i>, <i>Alangiaceae</i>, <i>Nyssaceae</i>, <i>Caprifoliaceae</i> and <i>Adoxaceae</i>. ca. 87 species under 14 genera; one herbarium consultation tour to CNH in Q2. Total: Three Herbarium Consultation Tours. Two to CNH and one to BSI-NRC & FRI
4.	<u>Flora of India, Vol. 14</u> 3 Families: <i>Rubiaceae</i>, <i>Valerianaceae</i> & <i>Dipsacaceae</i> (ca 85 genera & ca 610 species) <u>Team Leader:</u> Dr. M. Gangopadhyay, Scientist D (Retd.) <u>Team Members:</u> Dr. (Mrs.) Aarti Garg, Scientist D <u>Manuscripts available:</u> <i>Rubiaceae</i> (Dr. M. Gangopadhyay) <i>Valerianaceae</i> (Dr. Ved Prakash) <i>Dipsacaceae</i> (Dr. Silpi Das)	2018 – 2020	Editing and updatation of the families <i>Rubiaceae</i>, <i>Valerianaceae</i> and <i>Dipsacaceae</i> to be completed and final manuscript to be submitted by March 2020.
5.	<u>Flora of India, Vol. 15</u> 12 Families: <i>Stylidiaceae</i>, <i>Goodeniaceae</i>, <i>Campanulaceae</i>, <i>Sphenocleaceae</i>, <i>Ericaceae</i>, <i>Clethraceae</i>, <i>Pyrolaceae</i>, <i>Monotropaceae</i>, <i>Epacridaceae</i>, <i>Diapensiaceae</i>, <i>Plumbaginaceae</i>, <i>Primulaceae</i> ca 41 genera and ca 500 species <u>Team Leader:</u> Dr A. A. Mao, Director <u>Team Members:</u> Dr. S. S. Dash, Scientist E Dr. Umesh Tiwari, Scientist C Dr. Vijay Mastakar, Botanical Assistant <u>Manuscripts available:</u> <i>Stylidiaceae</i> (Dr. S. Bandyopadhyay) <i>Goodeniaceae</i> (Dr. T. A. Rao) <i>Campanulaceae</i> (Fascicle 22) <i>Sphenocleaceae</i> (Dr. S. Bandyopadhyay) <i>Ericaceae</i> excl. <i>Agapetes</i> & <i>Rhododendron</i> (Dr. S. Panda) <i>Ericaceae</i> (Only <i>Agapetes</i>) (Dr. Deepanweeta) <i>Clethraceae</i> (Dr. S. Bandyopadhyay) <i>Pyrolaceae</i> (Dr. S. Bandyopadhyay) <i>Monotropaceae</i> (Dr. S. Bandyopadhyay) <i>Epacridaceae</i> (Dr. S. Bandyopadhyay) <i>Diapensiaceae</i> (Dr. S. Bandyopadhyay) <i>Primulaceae</i> (Dr. S. K. Basak)	2019 – 2020	- Genus <i>Rhododendron</i> will be described by Dr. A. A. Mao and Dr. S. S. Dash <i>Campanulaceae</i> will be updated by Dr. S. S. Dash, Dr. Umesh Tiwari and Dr. Vijay Mastakar - Genus <i>Agapetes</i> of family <i>Ericaceae</i> will be updated by Dr. Deepanweeta Banik <i>Ericaceae</i> except <i>Rhododendron</i> and <i>Agapetes</i> will be described by Dr. S. Panda - The Family <i>Primulaceae</i> including <i>Primula</i> will be described by Dr. Umesh Tiwari. - One Herbarium Consultation Tour to BSI-SHRC and BSI-NRC in Q3 by Dr. Umesh Tiwari. - The family <i>Plumbaginaceae</i> will be described by Dr. Vijay Mastakar Total: Two Herbarium Consultation Tours.

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6.	<u>Flora of India, Vol. 16</u> 8 Families: Myrsinaceae, Sapotaceae, Ebenaceae, Styracaceae, Symplocaceae, Oleaceae, Salvadoraceae, Apocynaceae ca 69 genera and ca 389 species <u>Team Leader:</u> Dr. W. Ariadason, Scientist D <u>Manuscript Available:</u> Myrsinaceae (Dr. S. N. Biswas, Dr. A. Pramanik & Dr. Rijupalika Roy) Sapotaceae (Rakesh Kumari & K. Tothathri) Ebenaceae Genus-<i>Diospyrus</i> (Dr. V. Singh) Symplocaceae (Fascicle 22) Oleaceae (Dr. S. K. Srivastava) Salvadoraceae (Fascicle 22) Apocynaceae (Anukul Dutta & M. P. Nayar)	2019 – 2020	Compiled and updated manuscript to be submitted by March 2020.
7.	<u>Flora of India, Vol. 17</u> 5 Families: Asclepiadaceae, Loganiaceae, Buddlejaceae, Gentianaceae, Menyanthaceae ca 114 genera and ca 641 species <u>Team Leader:</u> Dr. J. Jayanthi, Scientist D <u>Team Member:</u> Dr. Prachiti D. Mule, Botanical Assistant <u>Manuscript Available:</u> Asclepiadaceae (Flora of India, Fascicle 24) Loganiaceae (Dr. P. Lakshminarasimhan) Buddlejaceae (Dr. P.V. Prasanna) Gentianaceae (Dr. Sharmistha Gupta) Menyanthaceae (Dr P.G. Diwakar)	2018 – 2020	Q1. Literature survey and collection of protologues. Updation of description of family Asclepiadaceae and Gentianaceae. Q2. Herbarium consultation tour to BSI-NRC. Updation of description of family Asclepiadaceae and Gentianaceae. Q3. Herbarium consultation tour to CNH. Updation of nomenclature and citation. Updation of taxonomic description. Updation of distribution and ecology of family Asclepiadaceae, Gentianaceae and Menyanthaceae Q4. Preparation of updated key to genus and species of family Asclepiadaceae and Gentianaceae. Compilation of updated manuscript of all families of Volume 17 for final submission Total: Two Herbarium Consultation Tours.
8.	<u>Flora of India, Vol. 18</u> 6 Families: Polemoniaceae, Hydrophyllaceae, Boraginaceae, Convolvulaceae, Cuscutaceae, Solanaceae ca 73 genera and ca 625 species <u>Team Leader:</u> Dr. S. L. Meena, Scientist D <u>Team Member:</u> ▪ Dr. Sanjay Mishra, Scientist C ▪ Dr. P. Hari Krishna, Botanical Assistant <u>Manuscript Available:</u> Polemoniaceae (S. K. Das Das & N. P. Singh) Hydrophyllaceae (N. P. Singh & S. K. Das Das) Boraginaceae (Dr P. M. Padhye) Convolvulaceae (Dr. P. J. Parmar) Cuscutaceae (Dr. P. J. Parmar) Solanaceae (Dr. P. Daniel & Dr. Reema Kumari)	2019 – 2020	Q1. Screening of literature, preparation of checklist, procurement of herbarium specimens from different Regional centres of BSI. Updation of 200 Spp. of families Polemoniaceae, Hydrophyllaceae & Boraginaceae Q2. Updation of 200 Spp. of family, Boraginaceae and Convolvulaceae. One Herbarium Consultation Tour to BSI-NRC. Q3. Updation of 225 Spp. of family, Convolvulaceae, Cuscutaceae and Solanaceae. One Herbarium Consultation Tour to BSI-SRC and to BSI-WRC. Q4. Finalisation and submission of final manuscript. Total: Two Herbarium Consultation Tours.

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
9.	<u>Flora of India, Vol.19</u> 3 Families: Scrophulariaceae (series <i>Pseudosolanaceae</i>, <i>Antirrhinideae</i> and <i>Rhinanthideae</i>), <i>Orobanchaceae</i> and <i>Lentibulariaceae</i> ca 68 genera and ca 570 species <u>Team Leader:</u> Dr. Arti Garg, Scientist D <u>Team Member:</u> ▪ Dr. O. N. Maurya, Scientist C ▪ Dr. Achuta Nand Shukla, Scientist C ▪ Dr. Ashutosh Verma, Scientist C ▪ Dr. Manas Debta, Scientist C ▪ Sri Anand Kumar, Botanist <u>Manuscript Available:</u> ▪ 168 species of Series <i>Pseudosolanaceae</i> and Series <i>Antirrhinideae</i> (Dr. Soumen Gantait) ▪ 10 genera and ca. 136 species of series <i>Rhinanthideae</i> (Smt. Munmum Munshi) ▪ 7 Genera and 36 Species of Family <i>Orobanchaceae</i> (Dr A. N. Henry & Sri Anil Kr.)	2019 – 2020	Work allotment : 1. Dr. Arti Garg: Genus <i>Pedicularis</i> (85 species). 2. Dr. O. N. Maurya & Sri Anand Kumar: Series <i>Pseudosolanaceae</i>, Series <i>Antirrhinideae</i> and Family <i>Orobanchaceae</i>. 3. Drs. A. N. Shukla & Ashutosh Verma: Series <i>Rhinanthideae</i> 4. Dr. Manas Debta: Family: <i>Lentibulariaceae</i> (c. 86 species of <i>Utricularia</i>, <i>Pinguicula</i> and <i>Veronica</i>) Q1. Consultation of literature and preparation of checklist of all the families. Q2. One field tour to western Himalaya by Dr. Arti Garg. Another field tour to western Himalayas combined with one herbarium consultation tour to Kashmir University and FRI by Dr. O. N. Maurya and Sri Anand Kumar. Updating of taxonomic account of 210 species. One field tour to North Sikkim (Lachen and Lachung Valley) by Dr. A. N. Shukla, Scientist C Q3. One Herbarium Consultation Tour to ASSAM, CNH and FRI of 21 days by Dr. M. R. Debta for critical study of specimens of genus <i>Veronica</i> and family <i>Lentibulariaceae</i>. Preparation of manuscript Q4. Finalisation and submission of manuscript Total: Three Field Tours & One Herb. Con. Tour.
10.	<u>Flora of India, Vol. 20</u> 4 Families: Gesneriaceae, Bignoniaceae, Pedaliaceae and Acanthaceae 108 Genera and ca. 646 species <u>Team Leader:</u> Dr. P. Lakshminarasimhan, Scientist E <u>Team Member:</u> ▪ Dr. W. Arisdason, Scientist D ▪ Dr. K. Karthigeyan, Scientist D ▪ Dr. Gopal Krishna, Bot. Asstt. <u>Manuscript available:</u> Gesneriaceae (Dr. U. C. Bhattacharya) Bignoniaceae (Dr. S. K. Srivastava) Pedaliaceae (Dr. N. C. Nair) Tribe Justiceae (Dr. Jayashree Bhattacharya) Tribe Ruellieae (Dr. D. Albertson & Dr. P. Venu) Subtribes <i>Andrographideae</i>, <i>Barlerieae</i> and <i>Asystasieae</i> of tribe <i>Justicieae</i> (Dr. Tinku Ghosh) Acantheae, <i>Nelsonieae</i> and <i>Thunbergieae</i> (Dr. Debatri Panja Kundu & Dr. P. Lakshminarasimhan) Genus <i>Andrographis</i> (Dr. G. Gnanasekaran)	2018 – December 2019	<i>Strobilanthes</i> of North East India & Himalayas will be described by Dr D. K. Roy. The entire final and updated manuscript is to be submitted by March 2020.

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
11.	Flora of India, Vol. 21 5 Families: Verbenaceae, Symphrometaceae, Avicenniaceae, Lamiaceae and Plantaginaceae 73 genera and ca 500 species Team Leader: Dr V. Sampath Kumar, Scientist D Team Member: - Dr. Gopal Krishna, Botanical Assistant - Dr. Anant Kumar, Botanical Assistant Manuscript available: Lamiaceae Genus <i>Leucus</i> (Dr. V. Singh) Tribe Stachydeae Genus <i>Gomphostemma</i> (Dr. R. P. Pandey) Genus <i>Stachys</i> (Dr. R. P. Pandey) Genus <i>Teucrium</i> (Dr. R. P. Pandey) Genus <i>Rubiteuris</i> (Dr. R. P. Pandey)	2019 – 2020	Quarter wise work Allotment: 1st and 2nd Quarter: - Tribe <i>Nepeteae</i> to be finalised by Dr. V. Sampath Kumar (ca 50 spp.) - Symphoremataceae and Avicenniaceae to be studied by Dr. Gopal Krishna (ca 15 spp.) - Plantaginaceae to be studied by Dr. Anant Kumar (ca 12 spp.) - One Herbarium Consultation Tour to BSI – ERC by Sri Anant Kumar in Q2 3rd Quarter: - Tribe Stachydeae (Lamiaceae) to be studied by Dr. V. S. Kumar (excl. <i>Leucas</i>, <i>Scutellaria</i> & <i>Stachys</i>) – ca 35 spp. - Editing of the tribe Ocimeae (Lamiaceae) (excl. <i>Isodon</i>, <i>Plectranthus</i>* and <i>Siphocranion</i>) ca 65 spp. including incorporating nomenclatural changes by the team leaders and team members (<i>from the thesis submitted by Dr. Sravani Banerjee, student of Dr. M. Sanjappa</i>) (*For <i>Plectranthus</i>, request made to Dr. Smitha & Dr. P. Sunoj Kumar of Calicut University) - One Herbarium Consultation Tour to BSI-NRC and FRI by Sri Anant Kumar 4th Quarter: - Tribe Ajugeae (Lamiaceae) to be described by Dr. V. Sampath Kumar (ca 20 spp.) - Editing of tribe Mentheae (Lamiaceae) including incorporating nomenclatural changes to be done by the team leaders and team members (ca 85 spp.) Total: Two Herbarium consultation tours
12.	Flora of India, Vol. 22 21 Families: Nyctaginaceae, Amaranthaceae, Chenopodiaceae, Basellaceae, Phytolacaceae, Polygonaceae, Podostemaceae, Nepenthaceae, Rafflesiaceae, Mitrastemonaceae, Aristolochiaceae, Piperaceae, Saururaceae, Chloranthaceae, Myristicaceae, Monimiaceae, Lauraceae, Hernandiaceae, Proteaceae, Thymeleaceae, Elaeagnaceae ca. 128 genera 762 species Team Leader: Dr. Manas Bhaumik, Scientist E Team Members: - Dr. A. K. Sahoo, Scientist E - Dr. Debasmita Dutta Pramanick, Scientist C - Dr. Sankar Rao, Scientist C - Dr. Geeta Chowdhury, Botanist - Dr. (Mrs.) Sudeshna Dutta, Bot. Asstt. - Sri S. K. Sharma, Sr. Pres. Asstt. Manuscript available: Chenopodiaceae (Dr. Tapas Paul) Polygonaceae (Dr. R. C. Srivastava, Dr. S. S. Dash) Podostemaceae (Dr. Alok Bhattacharya) Nepenthaceae, Rafflesiaceae, Mitrastemonaceae (D. P. Dam, Namita Dam and B. K. Das) Phytolacaceae (Dr. H. S. Debnath) Piperaceae (Prof. P. K. Mukherjee) Chloranthaceae: (Dr. H. S. Debnath) Monimiaceae: (Dr. H. S. Debnath) Lauraceae (Dr. Mohan Gangopadhyay, Dr. Tapas Chakraborty and Dr. Trina Bhuiya)	2019 – 2020	Work allotment for updation of available manuscript: - Nyctaginaceae: Dr. Debasmita Dutta Pramanick - Amaranthaceae: Dr. Geeta Chowdhury - Basselaceae: Dr. (Mrs.) Sudeshna Dutta - Phytolacaceae: Dr. A. K. Sahoo & Sri S. K. Sharma - Polygonaceae: Dr. Manas Bhaumik - Podostemaceae: Dr. M. Bhaumik & Sri S. K. Sharma - Nepenthaceae: Dr. (Mrs.) Sudeshna Dutta - Rafflesiaceae: Dr. (Mrs.) Sudeshna Dutta - Mitrastemonaceae: Dr. (Mrs.) Sudeshna Dutta - Aristolochiaceae: Dr. M. Bhaumik & Dr. (Mrs.) S. Dutta - Piperaceae: Dr. M. Bhaumik & Sri S. K. Sharma - Saururaceae: Dr. M. Bhaumik & Dr. Sankar Rao - Chloranthaceae: Dr. A. K. Sahoo & Dr. (Mrs.) S. Dutta - Myristicaceae: Dr. Geeta, Dr. Sudeshna & Sri Sharma - Monimiaceae: Dr. Manas Bhaumik - Lauraceae: Dr. Manas Bhaumik - Hernandiaceae: Dr. A. K. Sahoo & Sri S. K. Sharma - Proteaceae: Dr. Manas Bhaumik - Thymeleaceae: Dr. Bhaumik, Dr. Sahoo and Dr. Dutta - Elaeagnaceae: Dr. Geeta, Dr. Sudeshna & Sri Sharma Preparation of the manuscript with keys for all the genera and species of the allotted families and Final manuscript to be submitted in March 2020

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13.	<u>Flora of India, Vol. 24</u> 11 Families: Urticaceae, Moraceae, Cannabaceae, Ulmaceae, Juglandaceae, Myricaceae, Casuarinaceae, Fagaceae, Betulaceae, Salicaceae, Ceratophyllaceae ca. 63 genera and 363 species <u>Team Leader:</u> Dr. P. K. Pusalkar, Scientist E <u>Team Member:</u> Dr. Priyanka Ingle, Scientist B <u>Manuscript available:</u> Urticaceae (Dr. S. K. Murti) Moraceae (only <i>Ficus</i> of peninsular India by Dr. J. V. Sudhakar, <i>Ficus</i> of W. Himalayas by Dr. L.B. Choudhary and <i>Ficus</i> of North East India by Dr. Gautam Kumar Upadhyay) Casuarinaceae (Dr. B. P. Uniyal) Fagaceae (Dr. Vinay Ranjan & Shankhamala Mitra) Salicaceae (Dr. A. Pramanik and Dr. Sukla Chanda) Ceratophyllaceae (Dr. B. P. Uniyal)	2019 – 2020	Q1. Completion and updation of families Ceratophyllaceae, Cannabaceae, Platanaceae, Myricaceae and Casuarinaceae. Q2. Completion and updation of families Ulmaceae, Juglandaceae and Betulaceae. Q3. Completion and updation of family Moraceae (excl. <i>Ficus</i>) and Urticaceae (partly). One Herbarium Consultation Tour by Dr. Pusalkar at BSI – NRC. Another Herbarium Consultation Tour by Dr. Priyanka to BSI – SRC. One field tour to parts of Western Ghats and Western Coast region for field photographs by Dr. Pusalkar. Q4. Completion and updation of remaining part of the family Urticaceae. Finalisation and submission of manuscript. Total: 2 Herb. Consultation Tours and 1 Field tour

ANNUAL RESEARCH PROGRAMME OF BOTANICAL SURVEY OF INDIA ON FLORA OF INDIA (2019-20 AND 2020 – 21)

MONOCOTYLEDONS

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14.	Flora of India, Vol. 25 (ca 85 genera & 725 species) Family: Hydrocharitaceae (10 genera, 33 species) Family: Burmanniaceae (3 genera, 11 species) Family: Orchidaceae (72 genera, ca. 681 species) Sub-family Apostasioideae (1 genus, 3 species) Sub-family Vanilloideae (6 genera, 16 species) Sub-family Cyrtopodioideae (2 genera, 13 species) Sub-family Orchidoideae (37 genera, 239 species) Sub-family Epidendroideae (in part) Tribe Neottieae (4 genera, 31 species) Tribe Tropidieae (2 genera, 7 species) Tribe Gastrodieae (2 genera, 9 species) Tribe Nervilieae (3 genera, 18 species) Tribe Arethuseae (11 genera, 75 species) Tribe Malaxideae Sub-tribe Dendrobieae (4 genera, 270 spp.) Flora of India, Vol. 26 (ca. 83 genera & 579 spp.) Remaining part of Family Orchidaceae Sub-family Epidendroideae Tribe Malaxideae Sub-tribe Malaxidineae (4 genera, 134 species) Tribe Cymbidieae (4 genera, 59 species) Tribe Epidendreae (7 genera, 16 species) Tribe Collabieae (15 genera, 58 species) Tribe Podochileae (9 genera, 90 species) Tribe Vandeae (44 genera, 222 species) Team Leader: Dr. D. K. Agrawala, Scientist D Team Members: - Dr. J. S. Jalal, Scientist D - Dr. Chhaya Deori, Scientist D - Dr. Avishek Bhattacharjee, Scientist C	March 2019 to June 2020	Responsibility of Dr. D.K. Agrawala: <i>Apart from overall coordination for compilation and submission of manuscript, work on 81 genera and 624 species to be completed.</i> Sub-family: Vanilloideae (5 genera, 14 species) Sub-family: Orchidoideae (9 genera 22 species) Sub-family: Epidendroideae (67 genera, 586 species) Responsibility of Dr. J. S. Jalal: <i>Work on 22 genera and 242 species to be completed</i> Family: Burmanniaceae (3 genera 11 species). Sub-family: Orchidoideae (11 genera, 138 species). Sub-family: Epidendroideae (8 genera, 93 species). Responsibility of Dr. Chhaya Deori: <i>Work on 36 genera and 228 species to be completed</i> Sub-family: Apostasioideae (1 genus, 3 species) Sub-family: Vanilloideae (1 genus, 2 species) Sub-family: Cyrtopodioideae (2 genera, 13 species) Sub-family: Orchidoideae (4 genera 7 species) Sub-family: Epidendroideae (28 genera, 201 species) Responsibility of Dr. Avishek Bhattacharjee: <i>Work on 29 genera and 210 species to be completed</i> Family: Hydrocharitaceae (10 genera, 33 species) Sub-family: Orchidoideae (13 genera, 72 species) Sub-family Epidendroideae (6 genera, 105 species) Deliverable during April 2019 – March 2020 Data collection, compilation & preparation draft mss. Deliverable during April 2020 – June 2020. - Checking uniformity and consistency. - Preparation of Key to Genera - Editing and final submission of the manuscript.
15.	Flora of India, Vol. 27 17 Families: Agavaceae, Aloeaceae, Amaryllidaceae, Asparagaceae, Bromeliaceae, Cannaceae, Costaceae, Dioscoreaceae, Hypoxidaceae, Iridaceae, Liliaceae, Marantaceae, Musaceae, Smilacaceae, Stemoniaceae, Taccaceae, Zingiberaceae ca 64 genera and ca 592 species Team Leader: Dr. Rajib Gogoi, Scientist E Team Members: - Dr. J. H. Franklin Benjamin, Scientist C - Dr. Mahua Pal, Botanist - Dr. Basant Kumar Singh, Botanical Assistant Manuscript available: Dioscoreaceae (Dr. Aqramul Haque) Smilacaceae (Dr. G. V. S. Murthy) Musaceae (Dr. V. Singh) Zingiberaceae (Prof. M. Sabu) Iridaceae (Dr. D. D. Bahali) Bromeliaceae (Dr. P. G. Diwakar) Cannaceae (Dr. P. G. Diwakar)	March 2019 to December 2020	Work allotment for updation of available manuscript: Asparagaceae: Dr. Basant Singh Liliaceae: Dr. Rajib Gogoi & Dr. Mahua Pal Aloeaceae: Dr. J. H. Franklin Benjamin Amaryllidaceae: Dr. J. H. Franklin Benjamin Bromeliaceae: Dr. J. H. Franklin Benjamin Cannaceae: Dr. J. H. Franklin Benjamin Costaceae: Dr. J. H. Franklin Benjamin Hypoxidaceae: Dr. J. H. Franklin Benjamin Iridaceae: Dr. J. H. Franklin Benjamin Marantaceae: Dr. J. H. Franklin Benjamin Stemoniaceae: Dr. J. H. Franklin Benjamin Taccaceae: Dr. J. H. Franklin Benjamin Dioscoreaceae: Dr. Rajib Gogoi Deliverables during April 2019 – March 2020 Q1. Reference collection, updation of the nomenclature. Q2. Reference collection, updation of the nomenclature. One field tour to Arunachal Pradesh by Dr. Franklin. Q3. Reference collection, updation of the nomenclature. One Herbarium consultation tour to NBRI by Dr. Rajib Gogoi. Another Herbarium Consultation Tour to BSI-NRC and FRI by Dr. Mahua Pal. Another Herbarium Consultation Tour to CNH by Dr. Franklin Q4. Reference collection, updation of the nomenclature. One Herb. Cons. tour to BSI-ERC by Dr. R. Gogoi Total: Five Herbarium consultation tours Deliverables during April 2020 – December 2020 Finalisation and submission of manuscript alongwith keys and illustrations.

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
16.	<u>Flora of India, Vol. 28</u> 24 Families: Alismataceae, Aponogetonaceae, Araceae, Arecaceae, Butomaceae, Commelinaceae, Cymodoceaceae, Flagellariaceae, Juncaceae, Juncaginaceae, Lemnaceae, Limnocharitaceae, Najadaceae, Pandanaceae, Philydraceae, Pontederiaceae, Potamogetonaceae, Ruppiaceae, Trilliaceae, Triuridaceae, Typhaceae, Uvulariaceae, Xyridaceae, Zannichelliaceae, ca 108 genera and ca 526 species <u>Team Leader:</u> Dr. M. U. Sharief, Scientist E <u>Team Members:</u> ▪ Dr. S. S. Hameed, Scientist E ▪ Dr. Vinay Ranjan, Scientist D ▪ Dr. Rajib Gogoi, Scientist E ▪ Dr. B. K. Singh, Botanical Assistant ▪ Sri Anant Kumar, Botanical Assistant <u>Manuscript available:</u> Aponogetonaceae: Dr. M.S. Mondal & R. Guha Araceae: Sasikala & Dr. E. Vajravelu Commelinaceae: Dr.M. Nandikar & Dr. Gaurav Juncaceae: Dr. Geeta Chhetri Juncaginaceae: Dr. Geeta Chetri Lemnaceae: Dr. M. S. Mondal & Ratna Guha Potamogetonaceae: Dr. Mondal & R. Guha Alismataceae: Fascicle 23 Uvulariaceae: Fascicle 23 Trilliaceae: Fascicle 23	2019 – 2020	<u>Work allotment for updation of available manuscript:</u> Pontederiaceae: Dr. M. U. Sharief Philydraceae: Dr. M. U. Sharief Commelinaceae: Dr. M. U. Sharief Flagellariaceae: Dr. M. U. Sharief Limnocharitaceae: Dr. M. U. Sharief Pandanaceae: Dr. S. S. Hameed Arecaceae: Dr. S. S. Hameed Xyridaceae: Dr. Vinay Ranjan Typhaceae: Dr. Vinay Ranjan Ruppiaceae: Dr. Vinay Ranjan Najadaceae: Dr. Basant Kumar Singh Aponogetonaceae: Dr. Basant Kumar Singh Potamogetonaceae: Dr. Basant Kumar Singh Triuridaceae: Dr. Anant Kumar Butomaceae: Dr. Anant Kumar Zannichelliaceae: Dr. Anant Kumar Cymodoceaceae: Dr. Anant Kumar Lemnaceae: Dr. Anant Kumar Q1. Reference collection, updation of the nomenclature and description. Q2. Reference collection, updation of the nomenclature and description. Q3. Reference collection, updation of the nomenclature and description. One Herbarium Consultation Tour to BSI-ANRC for updation of the families Philydraceae and Flagellariaceae Q4. Preparation of Key to Genera. Editing and final submission of the manuscript.
17.	<u>Flora of India, Vol. 29</u> 2 Families: Cyperaceae and Eriocaulaceae <u>Cyperaceae:</u> (ca 610 taxa comprising ca 555 species 23 subspecies & 32 var. under 33 genera) <u>Eriocaulaceae:</u> (ca 85 species) <u>Team Leader:</u> Dr. V. P. Prasad, Scientist E <u>Manuscript available:</u> Eriocaulaceae: Dr. R. Ansari & Dr. N. P. Balakr Cyperaceae: Dr. (Ms.) Veena Chandra Tribe: Schoeneae and Sclerieae (Fascicle 27) Carex : (Dr. B. Jana & Dr. R.C. Srivastava) Kobresia: (Dr. B. Jana & Dr. R.C. Srivastava)	2019 – 2020	Reference collection, updation of the nomenclature and description. Preparation of Key to Genera. Editing and final submission of the manuscript.
18.	<u>Flora of India, Vol. 30</u> Family: Poaceae – Bambusoideae ca 30 genera and ca 150 species <u>Team Leader:</u> Dr. Pushpakumari, Scientist D	2019 – 2020	Reference collection, updation of the nomenclature and description. Preparation of Key to Genera. Editing and final submission of the manuscript.

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
19.	Flora of India, Vol. 31 & Vol. 32 Family: Poaceae ca. 248 genera and ca. 1480 species Team Leader: Dr. P.V. Prasanna, Scientist F Team Members: Dr. K.A.A. Kabeer, Scientist D Dr. L. Rasingam, Scientist D Dr. Manish Khandwal, Scientist D Dr. C. S. Purohit, Scientist C Dr. Sangita Dey, AJCB PDF Dr. K. Prasad, AJCB PDF Dr. C. P. Vivek, Botanical Assistant Mr. S. Nagaraju, Botanical Assistant Dr. S. Arumugam, Bot. Assistant Dr. J. Swamy, Botanical Assistant Manuscript available: - Dr. P.Singh, Ex- Director & Mrs. Suthrishna Kar, Ex Res. Sch. Genus <i>Festuca</i> for Vol. 31 - Dr. Alok Chorghe, Ex Res. Sch. Genera <i>Hyparrhenia</i> (4), <i>Parahyparrhenia</i> (1), <i>Pseudanthistiria</i>(3), <i>Themeda</i> (21), <i>Iseilema</i> (8) for Vol. 32 - Dr. S.R. Yadav, Dr. G. Potdar & Dr. K.V.C. Gosavi from Kolhapur University. Genera <i>Danthonidium</i> (1), <i>Hygroryza</i> (1), <i>Indopoa</i> (1), <i>Centotheca</i> (3), <i>Silentvalleya</i> (2) for Vol. 31 Genera <i>Hubbardia</i> (2), <i>Diectomis</i> (1), <i>Hemisorghum</i> (1), <i>Bhidea</i> (3), <i>Thelepogon</i> (1), <i>Pseudodichanthium</i> (1), <i>Trilobachne</i> (1), <i>Triplopogon</i> (1), <i>Limnopoia</i> (1), <i>Apocopis</i> (5), <i>Dichanthium</i> (11), <i>Bothriochloa</i> (14), <i>Glyphochloa</i> (16), <i>Capillipedium</i> (8), <i>Heteropogon</i> (6) for Vol. 32	2019 – 2020	Work allotment: <u>Dr. P. V. Prasanna, Scientist F:</u> Overall co-ordination, compilation and submission of final manuscript. <u>Dr. K.A.A. Kabeer, Scientist D:</u> 20 Genera and 125 Taxa - Introductory chapters. Vol. 31: 12 genera & 36 taxa [Ehrharta (6), Lygeum, Briza, Milium (1), Trikeria (2), Cynosurus (2), Lamarckia (1), Lolium (7), Vulpia (5), Castellia (1), Puccinellia (7), Briza (3), Streblochaete (1)] Vol. 32: 8 genera & 89 taxa [Sorghum (59), Pseudosorghum (1), Sorghastrum (1), Cleistachne(2), Vetiveria (2), Chrysopogon (21), Eremopogon (1), Euclasta (2)] <u>Dr. L. Rasingam, Sci. D & Sri J. Swamy, Bot. Asstt:</u> 55 Genera & 190 Taxa Vol. 31: 45 genera & 114 taxa [Leptaspis (1), Phaenosperma (1), Streptogyna (1), Centrotheca (3), Lophatherum (1), Elytrophorus (1), Zenkeria (4), Danthonia (3), Schismus (2), Centropodia (1), Dentonidium (1), Dichaetaria (1), Cortaderia (1), Arundo (1), Phragmites (3), Thysanolaena (2), Stipagrostis (8), Aristida (10), Enneapogon (4), Aeluropus (1), Eragrostiella (4), Coelachyrum (1), Eleusine (3), Acrachne (3), Dactyloctenium (4), Desmostachya (1), Myriostachya (1), Pommereulla (1), Tetrapogon (2), Chloris (11) Enteropogon (3), Trichloris (2), Gymnopogon (1), Microchloa (2), Cynodon (7), Schoenefeldia (1), Spartina (1), Bouteloua (3), Melanocenchris (3), Hilaria (1), Tragus (1), Zoysia (3), Dignathia (1), Lopholepis (1) and Perotis (3)] Vol. 32: 10 genera & 76 taxa [Nanoravia (1) Dimeria (52), Heteropogon (6), Tripsacum (2), Zea (1), Euchlaena (1), Chionachne (3), Polytoca (3), Trilobachnae (1) and Coix (6)] <u>Dr. Manish Khandwal, Scientist D:</u> 38 Genera & 223 taxa Vol. 31: 25 genera & 155 taxa [Pseudodanthonia (1), Duthiea(1), Helictotrichon (5), Avena (9), Trisetum (9), Trisetaria (1), Koeleria (3), Rostraria (3), Deschampsia (2), Holcus (2), Aira (1), Hierochloe (3), Anthoxanthum (8), Phalaris (6), Agrostis (26), Aniselytron (1) Calamagrostis (12), Deyeuxia (10) Lagurus (1), Polypogon (4), Cyathopus (1), Alopecurus (7), Phleum (4), Stipa (29), Piptatherum (6)] Vol. 32: 13 genera & 68 taxa [Spodiopogon (6), Saccharum (16), Eriochrysis (1), Miscanthus (3), Sclerostachya (2), Imperata (2), Eulalia (18), Lophopogon (3), Pogonatherum (4), Pseudopogonatherum (1), Eulaliopsis (2), Microstegium (9), Germainia (1)] <u>Dr. C. S. Purohit, Scientist C:</u> 32 genera & 161 taxa Vol. 31: 13 genera & 20 taxa [Dactylis (1), Colpodium (1), Paracolpodium (1), Hyalopoa (1), Catabrosella (1), Catabrosa (1), Phippsia (1), Eremopoa (3), Catapodium (1), Sclerochloa (1), Parapholis (1), Glyceria (2), Melica (5)] Vol. 32: 19 genera & 141 taxa [Pseudechinolaena (1), Oplismenus (3), Ichnanthus (2), Panicum (38), Hymenachne (4), Sacciolepis (4), Ottochloa (1), Cyrtococcum (7), Acroceras (3), Echinochloa (8), Alloteropsis (2), Brachiaria (27), Pseudobrachiaria (1), Urochloa (8), Eriochloa (2), Thuarea (1), Paspalum (1), Axonopus (1), Digitaria (29)] <u>Dr. Sangita Dey, AJCB PDF:</u> 23 Genera & 172 taxa Vol. 31: 10 genera & 47 taxa [Neyraudia (2), Leptochloa (5), Diplachne (1), Kengia (2) Orinus (1), Tripogon (29), Oropetium (3), Halopyrum (1), Dinebra (2), Ochthochloa (1)] Vol. 32: 13 genera & 125 taxa [Setaria(20), Holcolemma(1), Stenotaphrum (1), Tricholaena (1), Melinis (2), Pseudoraphis (3), Cenchrus (22), Trachys (4), Spinifex (1), Ischaemum(63), Apluda (2), Pogonachne (1), Sehima (4)] <u>Dr. K. Prasad, AJCB PDF:</u> Key and 5 genera & 16 taxa Vol. 31: Key to 248 genera and key to the Tribes, sub-tribes and Vol. 32: 5 genera & 16 taxa [Porteresia (1), Oryza (12) , Leersia (1), Hygroryza (1) and Zizania (1)]

Sl. No.	Name of The Project	Period	Quantifiable deliverables for 2019 – 20
19 (contd.)	Flora of India, Vol. 31 & Vol. 32 (Contd.) Family: Poaceae ca. 248 genera and ca. 1480 species	2019 – 2020	<u>Work allotment (Contd.):</u> <u>Dr. C. P. Vivek, Botanical Assistant:</u> 11 genera & 156 taxa ▪ Vol. 31: 3 genera & 68 taxa [Littledalea (1), Bromus (20), Eragrostis (47)] ▪ Vol. 32: 8 genera & 88 taxa [Isachne (38), Coelachne (5), Sphaerocaryum (1), Eriachne (2), Chandrasekharania (1), Jansenella (2), Arundinella (26), Garnotia (13)] <u>Mr. S. Nagaraju, Botanical Assistant:</u> 13 Genera & 41 taxa ▪ Vol. 31: Chloris (11). ▪ Vol. 32: 12 genera & 30 taxa [Elionurus (1), Phacelurus (2), Vossia (1), Hemarthria (5), Lasiurus (1), Coelorachis (4), Eremochloa (2), Rottboellia (1), Robynsiachloa (1), Manisuris (1), Ophiuros (3), Mnesithea (8)] <u>Dr. S. Arumugam, Bot. Assistant:</u> 23 Genera & 139 taxa ▪ Vol. 31: 19 genera & 87 taxa [Brachypodium (4), Elymus (27), Pseudoroegneria (2), Elytrigia (1), Hystrix (1), Leymus (1), Hordeum (8), Agropyron (1), Triticum (7), Patropyrum (1), Secale (2), Aegilops (1), Eremopyrum (1), Eremochloa (1), Sporobolus (18), Crypsis (2), Urochondra (1), Muhlenbergia (6), Lepturus (2)] ▪ Vol. 32: 4 genera & 52 taxa [Andropogon (8), Cymbopogon (23), Schizachyrium (6), Arthraxon (15)] <u>Miss. Ruma Bhadra, JPF:</u> 01 genus & 51 taxa ▪ Vol. 31: 01 genera & 51 taxa [Poa (51)]