

BOTANICAL SURVEY OF INDIA, CENTRAL REGIONAL CENTRE, ALLAHABAD



DATE OF ESTABLISHMENT	:	31ST JULY 1962
AREA UNDER JURISDICTION	:	Chhattisgarh, Madhya Pradesh and Uttar Pradesh.
TOTAL AREA	:	6,95,540 sq. km

Arti Garg

Scientist-E & Head of Office

A BRIEF INTRODUCTION ABOUT THE CENTRAL REGIONAL CENTRE, B.S.I., ALLAHABAD

- Central Regional Centre, BSI was established at 10 Chatham Lines, Allahabad on **31st July 1962**, covering the areas of the then M.P., major parts of U.P. and Rajasthan with **Dr. G. Panigrahi** as Regional Botanist-in-Charge.
- However, with the creation of AZC, Jodhpur in 1972, Rajasthan was excluded from the Central Regional Centre, BSI, Allahabad.
- At present the jurisdiction areas of Central Regional Centre cover a newly created state of **CHHATTISGARH** (1,46,361 sq km) (carved out of M.P. on 1st Nov., 2000), the present **MADHYA PRADESH** (3,08,252 sq km), and the present **UTTAR PRADESH** (2,40,927 sq km), covering a total area of *ca* 6,95,540 sq km.

- It encompasses two biogeographic zones viz. **Upper Gangetic Plain** and **Central Indian zone** along with Satpura and Vindhyan plateaus.
- At present Central Regional Centre is functioning in its own land of over 2 hectares of Associated garden with an office cum herbarium building and a residential complex.
- The centre has a well established Herbarium, Library, Museum and Associated Garden in order to take various research activities on taxonomy, ethno-botany, conservation of plants with well furnished laboratory for work on lichens.



Saraca asoca (Roxb.) Willd.



Bombax ceiba L.

OBJECTIVES OF CENTRAL REGIONAL CENTRE, BSI, ALLAHABAD

The Main objectives of the centre are:-

- To survey/explore plant wealth of entire jurisdiction areas covering M.P., U.P. and Chhattisgarh including Protected Areas, Wetlands (Fragile ecosystem) and their ethno-botanical aspects, if any.
- Documentation/Publication of state floras under its jurisdiction.
- To develop a living repository of plants of rare, threatened and endangered species. Introduction and propagation of medicinal and economic plants.

- **Survey, inventorization and documentation of non-flowering plants.**
- **Library consultation/herbarium study tours to various herbaria in connection with the state Floras.**
- **Preservation of identified collected plants in the herbarium (BSA).**
- **EIA studies of the areas under jurisdiction of the circle.**
- **Assessment/Monitoring of Botanic Gardens.**
- **Advisory services to various institutes and state government organizations.**

Protected Area Network under the Jurisdiction of Central Regional Centre

Biosphere Reserves : 3

- 1. Pachmarhi Biosphere Reserve**
- 2. Achanakmar-Amarkantak Biosphere Reserve**
- 3. Panna Biosphere Reserve**

National Parks : 14

Madhya Pradesh : 10

(Van Vihar, N.P.; Satpura N. P.; Madhav N.P; Kanha N.P; Panna N.P; Bandhavgarh N.P; Indira Priyadarshani Pench N.P.; Fossil N.P.; Dinosaur Fossil N.P.; Sanjay N.P.)

Uttar Pradesh : 1 (Dudhwa N.P)

Chhattisgarh : 3

[Indravati N.P.; Kanger Valley N.P.; Guru Ghasi Das (Sanjay) N.P.]

Wildlife Sanctuaries : **62**
(Madhya Pradesh-25, Uttar Pradesh- 26, Chhattisgarh- 11)

Tiger Reserves : **12**

Chhattisgarh : **3**

(Indravati, Achanakmar, Udanti-Sitanadi).

Madhya Pradesh : **6**

(Kanha, Pench, Bandhavgarh, Panna, Satpura, Sanjay-Dubri).

Uttar Pradesh : **3**

(Dhudwa, Pilibhit, Amangarh (buffer of Corbett TR)).

HERBARIUM

Acronym:

BSA

Herbarium Holdings

Seed plants, Pteridophytes and Gymnosperms :	1,04,315
Lichens :	11,191
Type Collections :	95

MUSEUM

- ***ca* 330 specimens of economic, medicinal and botanical interest.**
- **Several carpological collections.**
- **Several plant-based articles of common use prepared by the tribals of Madhya Pradesh and Chhattisgarh.**

LIBRARY

Books	:	5882
Journals	:	3978

ASSOCIATED BOTANIC GARDEN

- **Total Area :** *ca* 2 Acres.
- **Location:** Compound of Botanical survey of India, Central Regional Centre, 10 Chatham Lines, Allahabad.
- **Objectives:**
 1. To develop a living repository of plants of rare, threatened and endangered species.
 2. Introduction and propagation of medicinal and economic plants of the country for acclimatization and multiplication under local conditions.
- **Total Collection of Live Plants:** *ca* 600 species of trees, shrubs, herbs and aquatic plants.
- *Rauvolfia serpentina* (a rare plant) also included under CITES (App. II) is in cultivation.

STATE & DISTRICT FLORA

Published: 28 Books

Angiosperms: 16

- Exotic flora of Allahabad district (1984).
- Grasses of Madhya Pradesh (1984).
- Flora of Pachmarhi & Bori Reserve (1984).
- Flora of Raipur Durg & Rajnandgaon (1985).
- Drug Plant resources of Central India (1989).
- Flora of Bilaspur District Vol. I (1989), II (1999)
- Flora of Kasturba Gram, Indore (1991).
- Flora of Madhya Pradesh (Chhatarpur & Damoh) (1992).
- Floral elements of Madhya Pradesh (Acanthaceae & Euphorbiaceae) (1994).
- Dicotyledonous plants of Uttar Pradesh – A checklist (1999).
- Flora of Madhya Pradesh Vol. I (1993), II (1997) & III (2001).
- Supplement to the Flora of Madhya Pradesh (2001).
- Flora of Indrawati Tiger Reserve (2003).
- Floristic Diversity, Chhattisgarh (2005).
- Flora of Mizoram, Vol. –II (2012).
- Flora of Uttar Pradesh Vol.- I (2016).

Pteridophytes: 07

- **A dictionary of the Pteridophytes of India (1984).**
- **Floristic Diversity, Chhattisgarh (2005).**
- **A Census of Indian Pteridophytes (1984).**
- **Lycopodiaceae of India (1988).**
- **Selaginilaceae of India (1992).**
- **Pteridophytes of Andaman & Nicobar Islands (2001).**
- **Pteridophytes of Uttranchal (A Checklist) (2002).**

Mosses: 01

- **A Checklist of Indian Mosses (2005).**

Lichens: 04

- **Macrolichens of Sikkim (2005).**
- **Indian lichens: An Annotated Checklist (2010).**
- **Lichen Flora of Sunderbans Biosphere Reserve, West Bengal (2012).**
- **Foliicolous Lichens of India (2014).**

Manuscripts submitted:

- **Flora of Uttar Pradesh Vol. II (59 families, 439 genera & 945 species)**
- **Flora of Uttar Pradesh Vol. III (34 families, 179 genera & 447 species)**
- **Phytodiversity of Katarniaghat Wild Life Sanctuary.**
- **Phytodiversity of Bakhira Bird Sanctuary.**
- **Phytodiversity of Suhelwa Wild Life Sanctuary.**
- **Flora of Chambal National Park, Uttar pradesh**
- **Flora of Chandra Prabha Wildliife Sanctuary**
- **Flora India vol. 19**
- **Materials for Flora India Vol. 14 & 16.**

ENVIRONMENTAL IMPACT ASSESSMENT

**Environmental Impact Assessment (EIA)
studies of following areas have been
completed.**

- **Mara-Pump storage schemes (Hydroelectric Project of MPEB)**
- **Mongra Irrigation Project, Rajnandgaon, Madhya Pradesh**
- **Bansagar Canal Project, Madhya Pradesh and Uttar Pradesh.**
- **Rawghat iron ore mining area, Chhattisgarh**

Fragile Ecosystem and Protected Areas studied include

- **Flora of Salon Wetlands of Rai Bareli, Uttar Pradesh**
- **Wetland Flora of Lakha – Bahosi, Kannauj, Uttar Pradesh.**
- **Flora of Bandhavgarh National Park, Madhya Pradesh.**
- **Pteridophytes of Mehao WLS, Arunachal Pradesh.**
- **Flora of Pachmarhi Biosphere Reserve, Madhya Pradesh.**
- **Flora of Indravati Tiger Reserve, Chhattisgarh.**
- **Flora of Kanha Tiger Reserve, Madhya Pradesh.**
- **Coal mines of Shahdol, Madhya Pradesh and Bilaspur, Chhattisgarh.**
- **Lichens of Mehao WLS, Arunachal Pradesh.**
- **Lichens of Sundarbans Biosphere Reserve, West Bengal.**
- **Lichens of Neora Valley National Park, West Bengal.**

Projects completed by this Centre: 47

- Algal Flora of Wetlands of Madhya Pradesh
- Bansagar Canal Project, Madhya Pradesh and Uttar Pradesh.
- Checklist of Lichens of India
- Coal mines of Shahdol, Madhya Pradesh and Bilaspur, Chhattisgarh.
- Cytotaxonomical studies of selected taxa of Indian subtribe Cassinae
- Documentation of Biological resources and traditional knowledge of Achanakmar - Amarkantak Biosphere Reserve
- Flora Chambal Wildlife Sanctuary
- Flora of Bandhavgarh National Park, Madhya Pradesh.
- Flora of Chandra Prabha Wild Life Sanctuary, Uttar Pradesh
- Flora of Chhattisgarh (Vol. I, II)
- Flora of Indravati Tiger Reserve, Chhattisgarh.
- Flora of Kanha Tiger Reserve, Madhya Pradesh.
- Flora of Katarniyaghat Wildlife Sanctuary
- Flora of Madhya Pradesh, Vol I, II, III

- **Flora of Mizoram, Vol. II & III**
- **Flora of Pachmarhi Biosphere Reserve, Madhya Pradesh.**
- **Flora of Ranipur Wildlife Sanctuary**
- **Flora of Salon Wetlands of Rai Bareli, Uttar Pradesh**
- **Flora of Uttar Pradesh (Vol. I, II, III)**
- **Floristic Diversity of Alwara wetland, Kaushambi district, Uttar Pradesh**
- **Floristic diversity of 'Bhoj Ramsar Site' in Madhya Pradesh**
- **Floristic diversity of Kanger Valley National Park**
- **Floristic diversity of Kishanpur Wildlife Sanctuary, Lakhimpur-kheri, U.P.**
- **Floristic diversity of Nawabganj Bird Sanctuary**
- **Floristic diversity of Panna National Park**
- **Floristic diversity of Parvati Aranga Wildlife Sanctuary and adjacent Tikari forest area, Gonda district, U.P.**
- **Floristic diversity of Sanjay Gandhi National Park**
- **Floristic Diversity of Upper Ganga Ramsar Site, Brijghat to Narora, U.P.**
- **Foliicolous lichens of North - East India**
- **Lichen genera *Graphina* s.l. and *Phaeographina* in North-East India**

- **Lichens of Assam**
- **Lichens of Mehao WLS, Arunachal Pradesh.**
- **Lichens of Neora Valley National Park, West Bengal**
- **Lichens of Rajasthan, Kutch Gujrat**
- **Lichens of Sunderbans Biosphere Reserve, West Bengal**
- **Lichens of Terai region of Uttar Pradesh**
- **Mara-Pump storage schemes (Hydroelectric Project of MPEB)**
- **Microlichens of Sikkim**
- **Molecular and biochemical investigation in antidiabetic plant *Gymnema sylvestre***
- **Mongra Irrigation Project, Rajnandgaon, Madhya Pradesh**
- **Phytodiversity of Bakhira Bird Sanctuary, Sant Kabir Nagar, Uttar Pradesh**
- **Pteridophytes of Mehao WLS, Arunachal Pradesh.**
- **Rawghat iron ore mining area, Chhattisgarh**
- **Studies of fossil and living plants with reference to the impact of climate change on flora of Gangetic Plains and Central India.**
- **Taxonomic revision of lichen family Roccellaceae in India**
- **Taxonomic studies on lichenised non Thelotremoid Indian Graphidaceae**
- **Wetland Flora of Lakha – Bahosi, Kannauj, Uttar Pradesh.**

PUBLICATIONS

Concerted efforts by the Scientists of this centre have resulted in the publication of about 20 Red Data Sheets, over about 650 research papers, over 100 popular articles in Hindi and 33 Books.

NEW TAXA DESCRIBED: 66

- * Angiosperms : 21**
- * Fungi : 01**
- * Pteridophytes : 06**
- * Lichens : 39**

Ongoing Projects at CRC, Allahabad

1. FLORA OF INDIA VOL.- 19

[Scrophulariaceae, Orobanchaceae and Lentibulariaceae]

Duration: 2019-2020



Team Leader:

Dr. Arti Garg, Sci. E

Team members:

Dr. O.N.Maurya, Sci. D

Dr. A.N. Shukla, Sci. C

Dr. M.R. Debta, Sci. C

Dr. A.K. Verma, Sci. C

Dr. Anand Kumar,
Botanist

Checklist of vol. 19 (To submit by 30.10.2019)

- Checklist of family Scrophulariaceae, Lentibulariaceae and Orobanchaceae comprising of 464 taxa under 73 Genera, 412 species, 30 subspecies and 22 varieties along with the Bibliography was completed and submitted on 8th Nov., 2019.

Tours conducted

1. Survey and plant collection tour has been conducted to **Sikkim Himalayan regions** (Lachung, Katau, Nathula and adjoining areas) w.e.f. 28. 07. 2019 – 09.08.2019. Total 45 field numbers of plant specimens have been collected. Nearly 200 photographs of the habit of plant, flowers and landscape vegetation have been exposed.
2. Survey and plant collection tour has been conducted to **Western Himalayan regions** (Chamba, Sach Pass, Bairagarh, Rahala fall area, Rohtang, Solang valley and adjoining areas) w.e.f. 17.09.2019 to 25.09.2019. Total 85 field numbers of plant specimens have been collected. Nearly 500 photographs of the habit of plant, flowers and landscape vegetation have been exposed.



Veronica_biloba_L.



2. Name of the Project: Ex-situ conservation of RET and economically important species in the experimental garden of BSI CRC

Duration : **August 2020 to till date**

Name of Executive scientist:

1. **Dr. A.N. Shukla, Sci. C and Dr. Arti Garg, Sci. E & HoO**

Research Centre: Botanical Survey of India, CRC, Allahabad

Achievements:

Total species : **600**

No. of species introduced : **15**

Photographs taken : **200**

Phenological data collected of flowering plants time by time

15 species introduced: *Alectra parasitica* A.Rich. subsp. *chitrakutensis*, *Gloriosa superba*, *Buchnanian lanzan*, *Nelumbo nucifera*, *Selaginella bryopteris*, *Eremostachys superba*, *Eleocarpus* sp., *Radermachera xylocarpa*, *Prosopis cineraria*, *Adansonia digitata*, *Shorea robusta*, *Cordia macleodii*, *Pterocarpus marsupium*, *Annona muricata*, *Annona squamosa*, etc.





3. Morphological and cytological studies of selected plants from CRC garden, Allahabad.

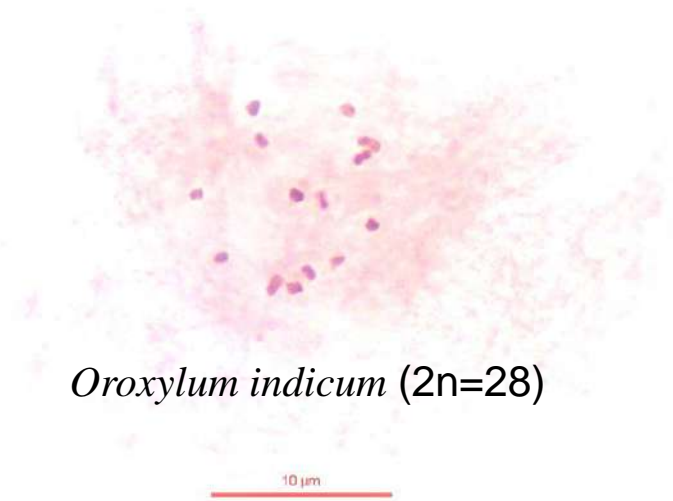
Duration: (2020-21)

Name of Executive scientist: Dr. Ashutosh Kr. Verma

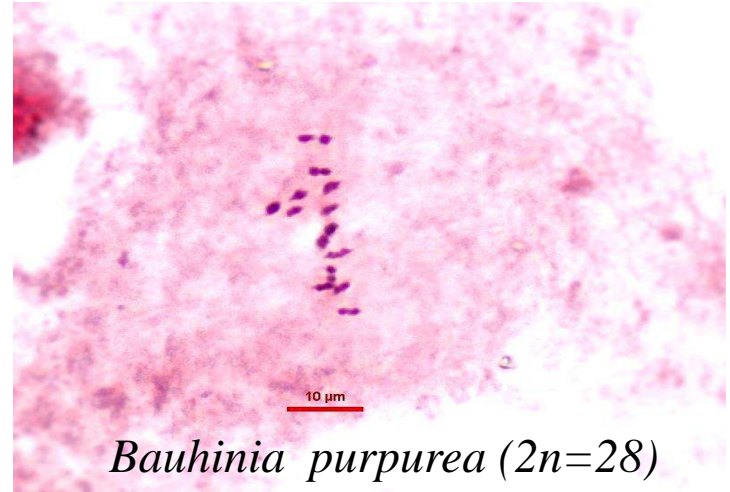
Target: 50 species

Achievements:

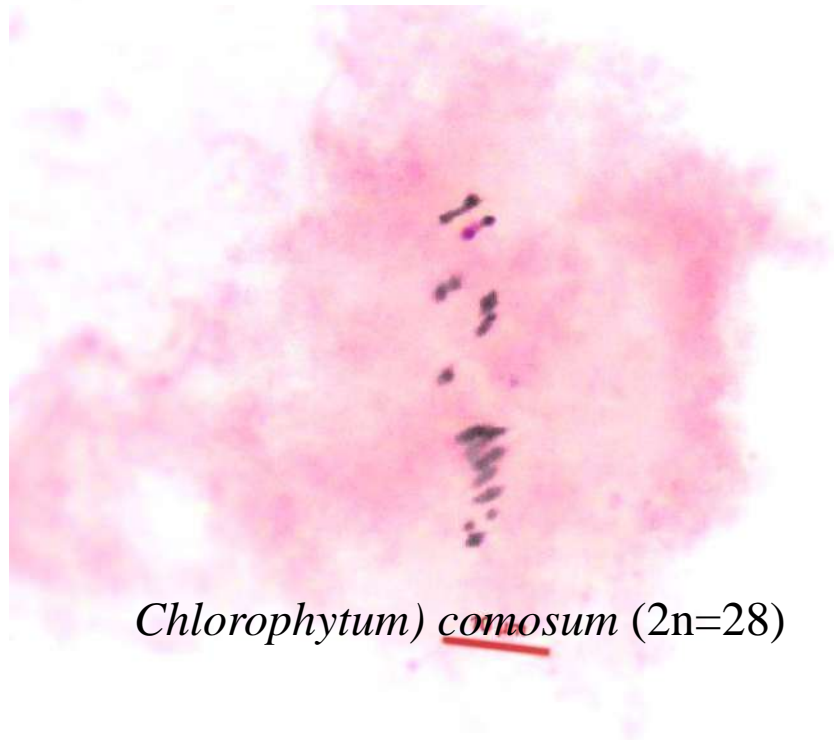
- ❖ A total number of 52 species (34 genera) are morphologically and cytologically worked out.
- ❖ For tree species and their accessions data on their GPS location also recorded which will be helpful for locating plant with unique genotype in future.
- ❖ Present work will be useful in preparation of 'Chromosome Atlas' of Botanic Garden of BSI, CRC, Allahabad.



Oroxylum indicum ($2n=28$)



Bauhinia purpurea ($2n=28$)



Chlorophytum comosum ($2n=28$)

4. Project Title: SEM studies of the species belonging to family Acanthaceae and Solanaceae available at BSA

- Executing officials: **Dr. Nitisha Srivastava (Botanical Assistant)**
- Date of initiation: **2018**; Date of completion: **2021**

**Summary of Achievements (September, 2018- March 2019): Study completed (60 species)
Manuscript writing is under process.**

Acanthaceae

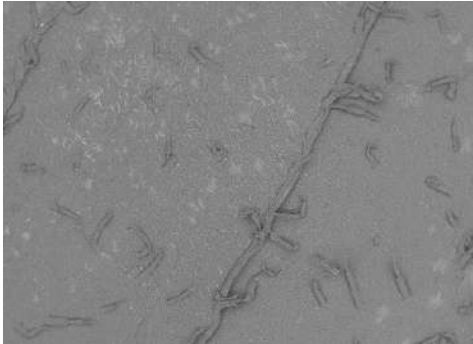
1. *Andrographis paniculata* (Burm. f.) Nees
2. *Andrographis echioides* (L.) Nees
3. *Barleria cristata* L.
4. *Barleria gibsonii* Dalzell
5. *Barleria prattensis* Santapau
6. *Barleria prionitis* L.
7. *Barleria strigosa* Willd.
8. *Blepharis integrifolia* (L.f.) E.Mey. & Drège ex Schinz
9. *Blepharis maderaspatensis* (L.) B.Heyne ex Roth
10. *Crossandra infundibuliformis* (L.) Nees
11. *Dicliptera chinensis* (L.) Juss.
12. *Dicliptera verticillata* (Forssk.) C.Chr.
13. *Dyschoriste nagchana* Nees Bennet
14. *Dyschoriste vagans* (Wight) Kuntze
15. *Dyschoriste erecta* (Burm.f.) Kuntze
16. *Eranthemum nervosum*
17. *Eranthemum purpurascens* Wight ex Nees
18. *Eranthemum roseum* (Vahl) R.Br.
19. *Gantelbua urens* (B. Heyne ex Roxb.) Bremek
20. *Haplanthus tentaculatus* Nees
21. *Haplanthus verticillatus* Nees
22. *Hygrophila auriculata* *Hygrophila auriculata* (Schumach.) Heine
23. *Hygrophila erecta* (Burm. F.) Hochr.
24. *Hygrophila polysperma* (Roxb.) T. Anderson
25. *Hygrophila ringens* (L.) R. Br. ex Spreng.
26. *Justicia adhatoda* L.
27. *Justicia glauca* Rottler
28. *Justicia japonica* Thunb.
29. [Justicia betonica L.](#)
30. *Justicia diffusa* Willd.
31. *Justicia gendarussa* Burm.f.
32. *Justicia glabra* K.D.Koenig ex Roxb.
33. [Justicia glauca Rottler](#)
34. [Justicia quinqueangularis K.D.Koenig ex Roxb.](#)
35. [Justicia vahlia Roth](#)
36. *Lepidagathis cristata* Willd. *Lepidagathis fasciculata* (Retz.) Nees
37. *Lepidagathis hamiltoniana* Wall.
38. *Lepidagathis incurve* Buch.-Ham. Ex D. Don
39. *Lepidagathis purpuricaulis* Nees
40. *Lepidagathis trinervis* Nees
41. *Phlogacanthus pubinervius* T. Anderson
42. *Ruellia prostrata* Poir.
43. [Ruellia suffruticosa Roxb.](#)
44. [Ruellia tuberosa L.](#)
45. *Rungia pectinata* (L.) Nees
46. *Rungia repens* (L.) Nees
47. *Strobilanthes auriculatus* Nees

Solanaceae

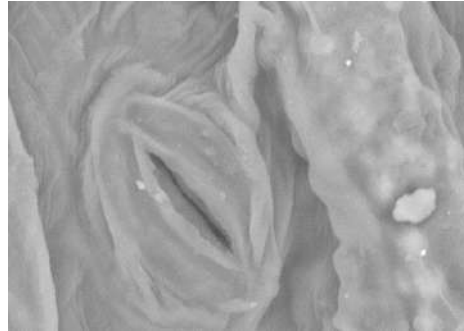
- 1) *Cestrum diurnum* L.
- 2) *Cestrum nocturnum* L.
- 3) *Datura innoxia* Mill.
- 4) *Datura metal* L.
- 5) *Datura stramonium* L.
- 6) *Nicotiana plumbaginifolia* Viv.
- 7) *Nicotiana rustica* L.
- 8) *Nicotiana tabacum* L.
- 9) *Petunia hybrid* Vilm.
- 10) *Petunia axillaris* (Lam.) Britton, Sterns & Poggenb.
- 11) *Physalis minima* L.
- 12) *Physalis peruviana* L.
- 13) *Withania somnifera* L. (Dunal)

SEM images

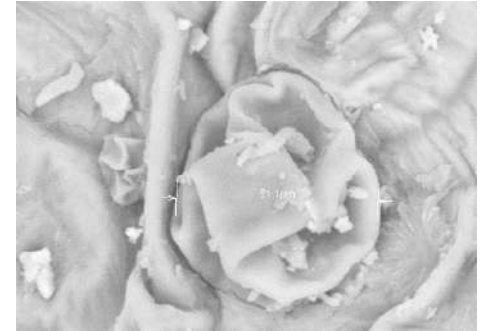
Andrographis echinoides (L.) Nees



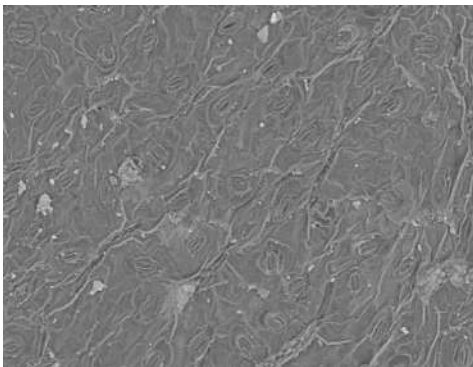
Lower epidermis of leaf showing distribution of nonglandular trichomes



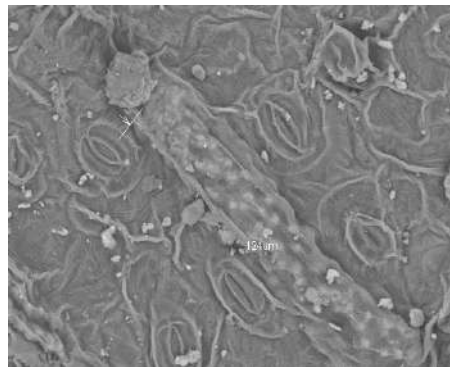
Stomata in details



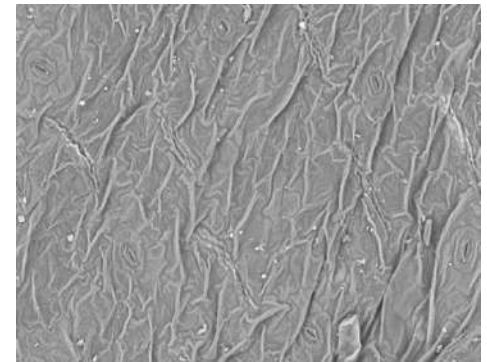
Glandular trichomes



Lower epidermis of leaf showing distribution of stomata



Cystolith



Upper epidermis of leaf

5. PTERIDOPHYTIC FLORA OF INDIA

(2020-21)

Brijesh Kumar

Targets for 2020 – 2021	Achievements	Remarks Reason for shortfall, if any
<p>Data collection, compilation & preparation draft Mss. (75 spp.)</p> <p>Q1.-(15 spp.) Q2. -(15 spp.) Q3.-(23 spp.) Q4. -(22 spp.)</p> <p>[Action plan received in Nov. 2021]</p>	<p>Species Described: 50</p> <p><i>Botrychium daucifolium</i> Wall. ex Hook. & Grev., <i>B. lanuginosum</i> Wall. ex Hook. & Grev., <i>B. lunaria</i> (L.) Sw., <i>B. multifidum</i> (S.G.Gmel.) Rupr., <i>B. multifidum</i> subsp. <i>robustum</i> (Rupr. ex Milde) Clausen, <i>B. simplex</i> E.Hitchc., <i>B. ternatum</i> (Thunb.) Sw., <i>B. virginianum</i> (L.) Sw., <i>H. zeylanica</i> (L.) Hook., <i>Ophioglossum costatum</i> R.Br., <i>O. eliminatum</i> Khand. & Goswami, <i>O. gramineum</i> Willd., <i>O. lancifolium</i> C.Presl, <i>O.lusitanicum</i> L., <i>O. oleosum</i> Khand., <i>O. parvifolium</i> Grev. & Hook., <i>O. pendulum</i> L., <i>O. petiolatum</i> Hook., <i>O. polyphyllum</i> A.Braun ex Seub., <i>O. reticulatum</i> L., <i>O. rubellum</i> Welw. ex A.Braun [Family-Ophioglossaceae]; <i>Lepisorus amaurolepidus</i> (Sledge) B.K.Nayar & S.Kaur, <i>L. nudus</i> Ching, <i>L. clathratus</i> Ching, <i>L. jakonensis</i> (Blanf.) Ching, <i>L. loriformis</i> Ching, <i>L. macrosphaerus</i> Ching, <i>L. mehrae</i> Fraser-Jenk., <i>L. scolopendrium</i> (Buch.-Ham. ex D.Don) Mehra & Bir, <i>L. sublinearis</i> Ching [Family-Polypodiaceae]. <i>Woodsia alpina</i> (Bilton) Gray, <i>W.andersonii</i> (Bedd.) Christ, <i>W. cycloloba</i> Hand.-Mazz., <i>W. elongata</i> Hook., <i>W. glabella</i> R.Br. ex Richardson, <i>W. hancockii</i> Baker, <i>W. lanosa</i> Hook., <i>W. rosthorniana</i> Diels., <i>Athyrium anisopterum</i> Christ, <i>A. atkinsonii</i> Bedd., <i>A. attenuatum</i> (C.B. Clarke) Tagawa , <i>A. cuspidatum</i> (Bedd.) M kato, <i>A. distans</i> (D.Don) T. Moore, <i>A. drepanopterum</i> (Kunaze) A. Braun ex Milde , <i>A. falcatum</i> Bedd., <i>A. fimbriatum</i> T. Moore, <i>A. flabellulatum</i> (C. B. Clarke) Tradieu, <i>A. foliosum</i> T. Moore ex R. Sim, <i>A. himalaicum</i> Ching ex Mehra & Bir [Family-</p>	<p>Work remaining-25 spp</p> <p>(This will completed by May 2021)</p>



Achievements

- **New Species: 01** [*Pedicularis raghvendrae* Arti Garg & R.Kr.Singh]
- **Rediscovery : 01** [*Pedicularis denudata*]
- **New Records: 10** [06 for Chhattisgarh and 04 for Arunachal Pradesh]
- **Publications:**
- **Book: 01** [R. Kr. Singh and Arti Garg. 2020. Floristic Diversity of Valmiki Tiger Reserve, West Champaran District, Bihar. Today & Tomorrow's Printers & Publishers, New Delhi - 110002.pp 1 - 820. ISBN 81-7019-674-7]
- **Research papers: 17**

Research papers published:

- D. Borah, Singh, R. Kr. and **Arti Garg**. 2020. Rediscovery of *Pedicularis denudata* (Orobanchaceae), a little known, rare herb, after 135 years from India. **Phytotaxa** 461(2): 136–138. (IF: 1.281)
- D. Borah, Singh, R. Kr. and **Arti Garg**. 2020. New records of four *Pedicularis* species (Orobanchaceae) for the Flora of Arunachal Pradesh state, India, and two new synonyms for *P. pantlingii*. **NeBIO**: 11(3): 180–186.
- Garg, A.** and A.P. Tiwari. 2020. Floristic account of the Van Vihar National Park in Bhopal, Madhya Pradesh, India. **Indian J. Forestry** 42(4): 323-336.
- Garg, A.**, R.K.Singh and B.S. Kholia. 2020. *Pedicularis raghvendrae* Arti Garg & R.Kr.Singh (Orobanchaceae), a new species from Sikkim Himalaya, India. **Phytotaxa** 452(1): 110–115. (IF: 1.281)
- R. kr. Singh and **Arti Garg**. 2020. Amritdhara Sacred Grove - an unparalleled Conservatory of Endemic, Endangered and Medicinal plants of Chhattisgarh. **Indian Forester** 146 (12): 1183-1184.
- Arti Garg**, Roxana T. Patrut, Adrian Patrut, Stephan Woodborne and Laszlo Rakosy 2021. Radiocarbon dating and status of the oldest extant Ceylon iron wood (*Manilkara hexandra*) in the riverine Ramsar site of India. **Current Science** 120 (3):562 – 566 (Research communications) (IF: .756)
- A. P. Tiwari, **Arti Garg** & **A. N.Shukla**. 2021. *Blumea sonbhadrensis*, a new synonym of *Erigeron sublyratus* (Asteraceae). **Phytotaxa** 480 (3): 291–296. (IF: 1.281)
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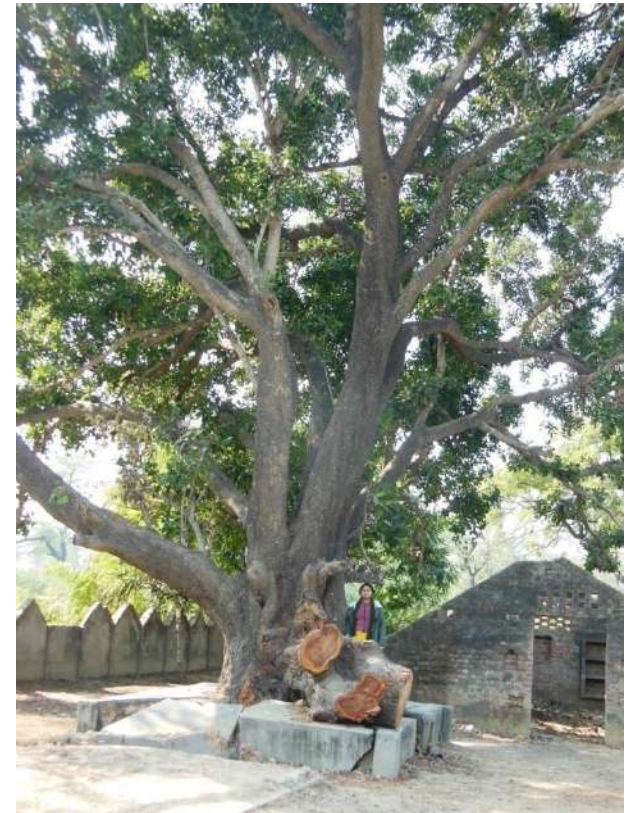
Other achievements

Living age of the two ancient *Adansonia digitata* L. trees in India was established as 800 ± 50 year old, the oldest Baobab trees outside Africa, leaving behind the former record holder, a 750 yr old tree in Mannar Town (Sri Lanka). India thus possesses the oldest *Adansonia* trees after Africa.



AMS radiocarbon dating revealed that the oldest living *Manilkara hexandra* Dubard tree exists in India (UGRS, U.P.) 550 ± 50 years old.

Chromosome count for **415 species** (**36 genera**) of family Cyperaceae were Documented .







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The Centre was established in 1988 for scientific and technical support to the State of Uttar Pradesh. The Centre was the first of its kind in the region. It has been instrumental in the development of the State's forest resources. The Centre has been instrumental in the development of the State's forest resources. The Centre has been instrumental in the development of the State's forest resources.

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ICAL SURVEY OF INDIA REGIONAL CENTRE, ALLAHABAD





HERBARIUM MAINTENANCE (2020-2021)

- **Total nos. of herbarium sheets incorporated: 1150**
- **Total nos. of sheets accessioned: 982**
- **Dusting of herbarium sheets: 17500**
- **Label writings: 321**
- **Re-stitching of herbarium sheets: 100**
- **Specimens/images sent on loan: 78**
- **Authentication/Identification services rendered: 59**
- **Poisoning: 150**
- **Genus and species cover changed: 1500**



Adansonia digitata L.

THANK YOU