

# **Angiospermic Flora of Neora Valley National Park, West Bengal**

**Vinay Ranjan, Anant Kumar and Gopal Krishna**  
Central National Herbarium, Botanical Survey of India  
Howrah

# **Project Title: Angiospermic Flora of Neora Valley National Park, West Bengal**

**Executing officials: Vinay Ranjan, Anant Kumar and Gopal Krishna**

**Date of initiation & completion: April, 2016- March, 2021**

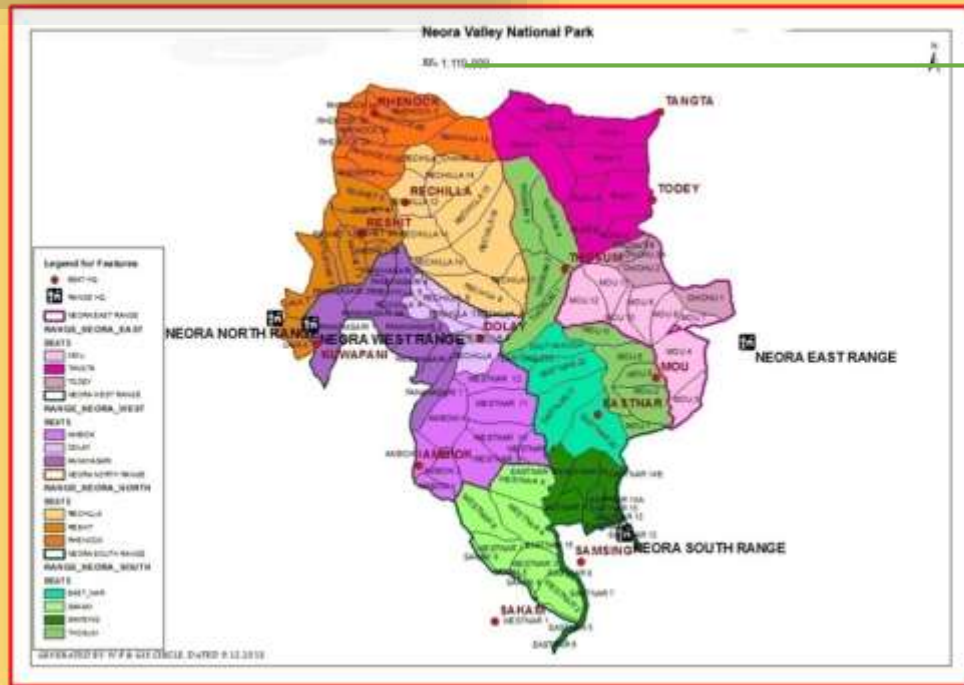
**Roles & Responsibilities of each of partner(s):**

**Vinay Ranjan-** Project coordinator, field tours, identification of plants, plant description

**Anant Kumar and Gopal Krishna -** Field tours, collection of plants, identification of plants, GPS reading, tracking map, Photography



- NVNP situated in Darjeeling, WB. It lies between 26°52'3"-27°7'3" N latitude and 88°45'-88°50' E longitude.
- Initially, NVNP was established with 84 sq km, later in 2017 area has been increased to 159.9 sq km.
- The altitude varies from 183m to 3200 m, the highest point in Rechilla Danda peak at 3,170m bordering Sikkim.



Location map: Neora Valley National Park

# Tour details 2016-2021

Tour Number	Duration <b>127days</b>	Field Numbers	Total Field Numbers <b>1831</b>
<b>1<sup>st</sup></b>	20.09.2016 to 05.10.2016	77001-77400; 75001-75096	<b>496</b>
<b>2<sup>nd</sup></b>	14.12.2016 to 24.12.2016	75201-75300 75301-75325	<b>125</b>
<b>3<sup>rd</sup></b>	30.03.2017 to 15.04.2017	75001-75200 75401-75461	<b>161</b>
<b>4<sup>th</sup></b>	12.02.2018 to 24.02.2018	75601-75694	<b>94</b>
<b>5<sup>th</sup></b>	27.09.2018 to 09.10.2018	77901-78000 79301-79365	<b>165</b>
<b>6<sup>th</sup></b>	06.12.2018 to 18.12.2018	84501-84600 84601-84655	<b>155</b>
<b>7<sup>th</sup></b>	26.03.2019 to 09.04.2019	83601-83700	<b>164</b>
<b>8<sup>th</sup></b>	24.05.2019 to 06.06.2019	80501-80600 80601-80700 80701-80713	<b>213</b>
<b>9<sup>th</sup></b>	17.09.2019 to 30.09.2019	80714-80800 86101-86183	<b>179</b>
<b>10<sup>th</sup></b>	16.12.2019 to 23.12.2019	86801-86879	<b>79</b>



















## Achievements including:

**Total area covered:** Completed field survey of all localities (Ruka, Chichu, East Nar, Mo, Kolbong, Lava, Reshit, Rhenok, Pankhasari, Ambiook, Westnar, Rechila, Rechila Chak, Thusum, Sakam situated between 26°52' 3"-27°7'3" N Latitude and 88°45'- 88°50' E Longitude and located within 159 km<sup>2</sup> areas of Upper Neora Range and Lower Neora Range of the National Park.

**Number of tours undertaken:** Ten field tours undertaken since inception,

**Number of species identified :** In total,1560 field numbers identified so far.

**Expected no. of taxa:** c. 0800

**Photographs depicted:** c. 3450

**Total Field number of collections:** 1831

**Total taxa identified so far:** c. 0700

Deliverables	Summary of Achievements
Field tours	10 field tours undertaken
Collection of botanically interesting species	<i>Ceropegia pubescens</i> Wall., <i>Agapetes sikkimensis</i> Airy Shaw, <i>Medinilla himalayana</i> Hook.f. ex Triana, <i>Hibiscus fragrans</i> Roxb., <i>Decaisnea insignis</i> (Griff.) Hook.f. & Thomson; <b><i>Helwingia himalaica</i></b> Hook.f. & Thomson ex C.B. Clarke; <i>Rhopalocnemis phalloides</i> Jungh.; <i>Goodyera recurva</i> Lindl.; <i>Odontochilus crispus</i> (Lindl.) Hook.f.; <i>Liparis resupinata</i> Ridl.; <i>Impatiens cathcartii</i> Hook.f.; <i>Gomphostemma mastersii</i> Benth. ex Hook.f.
New findings Published	<b><i>Epipogium japonicum</i> Makino</b> - addition to Indian flora <b><i>Elytranthe psilantha</i> (Hook.f.) Danser</b> - generic record to West Bengal flora <b><i>Oreorchis patens</i></b> - addition to the flora of Eastern Indian Himalaya <b><i>Cardamine circaeoides</i> Hook.f. &amp; Thomson, <i>Codonopsis gracilis</i> Hook.f. &amp; Thomson, <i>Decaisnea insignis</i> (Griff.) Hook. f. &amp; Thomson, <i>Synotis rufinervis</i> (DC.) C. Jeffrey &amp; Y.L. Chen and <i>Synotis vagans</i> (Wall. ex DC.) C. Jeffrey &amp; Y.L. Chen</b> - <b><i>Goodyera recurve</i> Lindl., <i>Zeuxine gracilis</i> (Breda) Blume</b> - addition to West Bengal flora (7)
Communicated	<b>A new variety of <i>Ophiorrhiza ochroleuca</i> from Neora Valley National Park, Darjeeling Himalaya, India, and notes on its typification <i>Rheedeia</i></b> <b>A New Species of <i>Zehneria</i> Endl. (Cucurbitaceae) from West Bengal, India based on Morphological and Molecular Evidences</b> <b>Vinay Ranjan,<sup>1</sup> Anant Kumar,<sup>2</sup> Gopal Krishna,<sup>3</sup> and Hanno Schaefer<sup>4</sup></b> <i>We have collaborated with World Cucurbitaceae expert (Hanno Schaefer), After taking permission from NBA, we have sent specimens to him for molecular study</i>



# Publication

1. Krishna, G., A. Kumar, Vinay Ranjan & Nisha Goswami (2016): *Rhopalocnemis phalloides* (Balanophoraceae): A root parasite from Neora Valley National Park, West Bengal. *BSI-ENVIS Newslett.* 21 (2): 7.
2. Ranjan, Vinay, A. Kumar & G. Krishna (2017). On the distribution of some rare species in Neora Valley National Park, Darjeeling, West Bengal. *Indian J. Forest.* 40(4):333-336.
3. Kumar, A., G. Krishna, D. K. Agrawala & Vinay Ranjan (2019). *Oreorchis patens* (Orchidaceae): an addition to the flora of Eastern Indian Himalaya. *Richardiana* 3: 109-116.
4. Kumar, A., G. Krishna & Vinay Ranjan (2019). A third species of *Epipogium* (Orchidaceae) added to the Indian flora. *Richardiana* 3: 17-24.
5. Ranjan, Vinay, G. Krishna, A. Bhattacharjee & A. Kumar (2020). Addition of two ground orchids in flora of West Bengal (India). *Richardiana* 4:147-156.



**Maesa rugosa** C.B. Clarke



**Asystasia macrocarpa** Nees



**Engelhardtia spicata** Lechen ex Blume



**Leycesteria gracilis** (Kurz) Airy Shaw







**RARE AND CURIOUS PLANTS OF NVNP**



*Odontochilus crispus*



*Goodyera recurva*



*Helwingia himalaica*



*Rhopalocnemis phalloides*



**Project 6: Editing of Flora of Bihar Vol. 1 (Ranunculaceae-Mimosaceae)**  
**Dr. Vinay Ranjan, Scientist-E, Dr Kumar Avinash Bharati, Scientist-C and Dr**  
**Anand Kumar, Botanist**  
**2020–2021**

**Previous editing (Dr W. Arisdason, Scientist-D & Dr Subir Bandyopadhyay, Scientist-C (Retd.))**

<b>Families</b>	<b>Genera</b>	<b>Species</b>	<b>Varieties</b>	<b>Cultivated taxa</b>	<b>Total Taxa</b>
<b>28</b>	<b>99</b>	<b>203</b>	<b>5</b>	<b>59</b>	<b>267</b>

**Present completed editing**

<b>Families</b>	<b>Genera</b>	<b>Species</b>	<b>Subspecies</b>	<b>Varieties</b>	<b>Cultivated taxa</b>	<b>Total Taxa</b>
<b>31</b>	<b>138</b>	<b>296</b>	<b>1</b>	<b>16</b>	<b>47</b>	<b>360</b>

## Status of complete manuscript

No. of families: **59**

No. of genera: **237**

No. of species: **499**

No. of subspecies: **1**

No. of varieties: **21**

Cultivated taxa: **106**

Editing completed for **627 taxa (including 106 cultivated taxa)**.  
The complete (Press ready) manuscript will be submitted within 2-3 months.



**Project 7: Editing of Flora of Jharkhand Vol. 1 (Ranunculaceae-Mimosaceae)**  
**Dr. Vinay Ranjan, Scientist-E, Dr Kumar Avinash Bharati, Scientist C and Dr**  
**Anand Kumar, Botanist**  
**2020–2021**

**Previous editing (Dr W. Arisdason, Scientist-D & Dr Subir Bandyopadhyay, Scientist-C (Retd.))**

<b>Families</b>	<b>Genera</b>	<b>Species</b>	<b>Varieties</b>	<b>Cultivated taxa</b>	<b>Total Taxa</b>
<b>30</b>	<b>101</b>	<b>205</b>	<b>6</b>	<b>59</b>	<b>270</b>

**Present completed editing**

<b>Families</b>	<b>Genera</b>	<b>Species</b>	<b>Subspecies</b>	<b>Varieties</b>	<b>Cultivated taxa</b>	<b>Total Taxa</b>
<b>31</b>	<b>138</b>	<b>296</b>	<b>1</b>	<b>16</b>	<b>47</b>	<b>360</b>

## Status of complete manuscript

No. of families: **61**

No. of genera: **239**

No. of species: **501**

No. of subspecies: **1**

No. of varieties: **22**

Cultivated taxa: **106**

Editing completed for **630 taxa (including 106 cultivated taxa)**.

The complete (Press ready) manuscript will be submitted within 2-3 months.





THANKS