

## The Alpine Orchids of North Sikkim

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Sikkim is one of the few states of the Republic of India that has an Orchid as its State Flower – the *Dendrobium nobile*, Lindl. Its unique purple coloured sepals and petals and a deep blotch on its lip is a delight to the eyes of every botanist, flower enthusiast as well as tourists visiting the strategically located landlocked State.



*Dendrobium nobile*, Lindl.

The State comprises, within a very short distance, snow capped mountains on the North, East and West and tropical zone of the State of West Bengal in the South, responsible for a unique bio-diverse natural phenomenon to host multiplicity of species ranging from the tropical to the alpine. The State has four districts, North, South, East and West Sikkim with a geographical range, of varying altitudes and climatic features. This order contains six Wildlife Sanctuaries and one National Park, namely, Shingba Rhododendron Sanctuary

(North Sikkim), Barsey Rhododendron Sanctuary (West Sikkim), Kyongonsla Alpine Sanctuary (East Sikkim), Maenum Wildlife Sanctuary (South Sikkim), Pangolakha Wildlife Sanctuary (East Sikkim), all wildlife sanctuaries and Khangchendzonga National Park (spread over West and North Sikkim), together covering around 2100 Sq. Km. in area.

With its peculiar geographical environs, this region in the Eastern Himalayas, records more than 4000 species of flowering plants, many of which are rare and endemic to the State only. This exceptional natural gift stimulated botanical pioneers like Sir. J.D.Hooker to transverse the region back as 1848, in completing the epical publication titled, "Flora of (British) India". Later on John Lindley, Sir George King, Robert Pantling. C.B. Clarke, D. Prain, J.S. Gamble, Sir George Watt, G.A. Gammie, W.W. Smith and G.H. Cave contributed additionally on the flora of the region. Of which, John Lindley's "Orchidology of India" published in the Journal of the Linnean Society and "The Orchids of the Sikkim-Himalayas" by Sir George King and Robert Pantling, published in the year 1898 opened the flood gates of the State's rich orchid life, with the latest publication as early as 2007, "Orchids of Sikkim and North East Himalayas" by Sri. S.Z.Lucksom, SFS, an official of the Sikkim Forest Department.

The monumental work, "The Orchids of the Sikkim-Himalayas" by Sir George King and Robert Pantling", comprises of illustrated line drawings and description of 449 species from the region. Trained Lepchas were fanned out to the region to collect orchids from their natural habitats and were brought down to the then Cinchona Plantation in Mungpoo, where Pantling was the Deputy Superintendent. He had them illustrated in real form and Sir George King, the Superintendent of then Botanical Survey of British India was responsible for the write ups. Even after more than a century, this monumental work remains the most sought after and authentic reference work on orchids of the region.

However, with the advent of modern digital photography, a detailed photographic documentation of all species of the region is still pending.

The survey and documentation in North Sikkim is considered the most challenging of the region, which is also believed to be the only habitat of most of the Alpine orchids of the region. With its unpredictable weather conditions which triggers frequent landslides and road blocks and remoteness, this region is a real challenge even to hardcore explorers. As such the plant kingdom of the region remains a mystery and untouched to the outside world. This author had the opportunity to be in the region to study and re-document orchids in bloom in natural habitat (in si-tu) particularly related to the work of King and Pantling.

The flowering season of the alpine flowers region begins with the monsoon by mid of May from the low alpine forests (8500 feet) to the mid of October in the dry alpine meadows (above 20000 ft). This author's forays to the North Sikkim during the monsoon and summer months in search of orchids exposed astonishing results with the opportunity of finding more than 80 species from the region, of which several are re-discoveries after a gap of more than 100 years and with a few new reports to the scientific world.

The rediscovery of *Epipogium aphyllum*, Swartz, commonly called “The Ghost Orchid” because of its unpredictable appearances was a climax. It is believed that this species will “never reappear” on its same location again has proved the difficulty in locating it. The find of the species, that also in full bloom, was a result of a meticulous combing operation of various habitats of the region, spread over two seasons.



*Epipogium aphyllum*, Swartz.



*Corybas himalaicus*, (King and Pantling) Schltr.

*Corybas himalaicus*, (King and Pantling) Schltr., the only orchid species of the region with no petals, added another feather to the whole survey process. This

species happens to be the only one of its kind in the Northern Hemisphere adds to the significance of the regions orchids genera. The most interesting and astonishing fact is that the same was rediscovered after more than a century from the same “moist vertical rock”, from where the collectors of King and Pantling availed.



*Muguthang valley, North Sikkim.*

Muguthang, gateway to the Llonakh valley is a paradise to hardcore botanical explorers, with hundreds of rare alpine species growing untouched for centuries. W.W. Smith and G.H. Cave in their article, “The Vegetation of the Zemu and Llonakh Valleys of Sikkim” published in the Records of the Botanical Survey of India (Volume IV. - No. 5) in the year 1911 described the vegetation of the valley in detail. This author's venture in to the valley for orchids has brought out the astonishing find of *Peristylus elisabethae*, (Duthie) R.K. Gupta and *Androcorys pugioniformis*, Lindl ex. Hook, with the former a new find to the region and later a rediscovery. Both of them were found growing at an altitude of 14924 and 15698 ft respectively, probably making both of them the highest growing orchid species of the Eastern Himalayas.



*Peristylus elisabethae*, (Duthie) R.K. Gupta.

*Bhutanthera albovirens*, Renz., a rare terrestrial high alpine orchid species, till date believed to be a native of Bhutan was found growing at an altitude of 13300 ft from the region. This is the first ever report of the species from Sikkim added great significance to the unexplored nature of the region. Also the discovery of the Alba variety of *Neottianthe secundiflora*, Kraenzl from the region added a new report to the scientific world.



*Bhutanthera albovirens*, Renz.

With respect to *Neottia listeroides*, Lindl., a very rare species of the region, the authors, in their monumental work, noted, “The specimens from which the drawing was made were not quite fresh, and we are doubtful about the colour of their flowers being normal”. The rediscovery of the same, that also from two habitats, and documentation with high definition photography has enabled every botanists to understand the plant more.



*Neottia listeroides*, Lindl.

All the five “Jewels” orchids (which include the Goodyeras and Zeuxines) found and described by the authors about a century ago still thrives in the same habitats, which shows how intact the regions ecology is. The Jewels are *Goodyera foliosa*, Benth. ex Hook, *Goodyera fusca*, Lindl, *Goodyera repens*, Brown, *Goodyera vittata*, Benth and *Myrmechis pumila*, Hook of which *Goodyera repens*, Brown and *Myrmechis pumila*, Hook are very rare.

The presence of beauties like *Bulbophyllum leopardinum*, (Wall.) Lindl. Ex Wall. and *Calanthe trulliformis*, King and Pantling in the low alpine forests to the very rare *Peristylis elisabethae*, (Duthie) R.K.Gupta in the high alpine zone

shows how intact and virgin the undiscovered land of North Sikkim is. This author is of the concerned opinion that more more exploration trips will yield more and more new finds to the botanical world.



*Bulbophyllum leopardinum*, (Wall.) Lindl. Ex Wall.

The sensitive nature of its geography as a border state puts a lot restriction in public movements. However, with proper permissions from The Forest Department and The Home Department of Sikkim as well as from The Army will help hassle free scientific works. The role of our brave and devoted men in uniform serving in the region, rendering help to this ordinary individual is an unforgettable factor in life and those visiting the region.

References: 1) The Flora of British India by Sir. J.D. Hooker

2) The Orchids of the Sikkim-Himalayas by Sir. George King and Robert Pantling.

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