

Book Review

***Plants of Kedarnath Wildlife Sanctuary, Western Himalaya:
A Field Guide* by Ishwari Datt Rai, Gajendra Singh & Gopal Singh
Rawat. M/s Bishen Singh Mahendra Pal Singh, Dehradun (India),
First edition, 2017. Pages 393 Rs.695 (\$35.00), ISBN-10: 8121109590;
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This book is illustrated with more than 1200 colored photographs of mostly the wild plants often found in the Kedarnath Wildlife Sanctuary (KWS) in the Western Himalaya. The book is divided into main eight chapters; i. Introduction; ii. Panchkedar, their location, etc.; iii. Major valleys and important places; iv. Local people and land use practices; v. History of Forest Exploitation and Management; vi. Attraction of Biodiversity dealing with the Birds, Mammals, Butterflies; Ferns and Fern allies, Orchids, and Rhododendrons; vii. General vegetation and forest types, which has been divided into 10 types; 1. Subtropical needle leaved forest; 2. Montane Broad leaved evergreen forests; 3. Montane Broad leaved deciduous forests; 4. Montane Needle leaved forests; 5. Montane Grass land; 6. Subalpine Forests; 7. Subalpine Bamboo Brakes; 8. Subalpine Scrub; 9. Alpine Moist Scrub; 10. Alpine Moist Meadows. The eighth chapter deals with the floristic analysis of the rare and the endemic plants of the region. The other chapters deal with: How to use the guide; Key to plants with flower colours; Enumeration of plants; the Checklist of plants of the region. And, in last the literature cited, an Index of botanical plants and families and finally an index of local names.

In the main text the botanical name of the species, and the local name in Devnagri script is given. On one side a photograph of the plant and on other side description of the species with flowering months, and the name of the places from where plant was seen and photographed (whether the plant specimens were collected or not collected is not clear as no Field book number and date is given) and in last in brackets, the distribution of the plant in other parts of the world is mentioned. The number of photographs of the species are 576 to the count.

Apart from the main text, the semi diagrammatic maps are given to show the area of the KWS, Panchkedars and the vegetation types. A Google Earth map of the Kedarnath temple region and the status of the river Mandakini before and after 16-17th June 2013 is vividly displayed. The book also contains more than 30 beautiful landscapes photographs of the KWS important localities, animals, butterflies, etc. No doubt, such an original botanical photographs from this region are presented for the first time.

However, a few shortcomings in the book may be noticed. While dealing with chapter one, a short history of the botanists, who had visited

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and collected the plants should have been mentioned like Hoffmeister, who was at Kedarnath on 29th June 1845 and collected plant from this region. *Pedicularis hoffmeisteri* Klotzsch photographed from this region, was first collected from Kedarnath by Dr. Hoffmeister a botanist & physician to the Prince Waldemar of Prussia now a state in Germany and the type specimen lies in Berlin Herbarium. B N Mehrotra and A S Aswal had collected plants from Mandakini valley and brought several papers including new records. B N Mehrotra had presented a thesis on the 'Flora of Mandkini Valley'. These publications should have been included in the Literature Cited along with other relevant publications of the region. However, the work of K M Balapure who had visited Madhya Maheswar in 1983-84 is well mentioned in the literature cited.

In chapter four very scanty information is provided of the field crops, like only *Amaranthus* species is mentioned, while many have been left such as *Fagopyrum esculentum* (Fafar), etc. *Citrus medica* (Nimboo bara) which is the main fruit crop of Mandal region is totally missing. Though, in chapter eight i.e., Floristic Analysis, the rare plants of IUCN Red List (2017) have been quoted but their status in KWS has not been given. Many important plants which are mostly found on the way while travelling in the KWS have not been included such as; *Acorus calamus*, *Citrus medica*, *Cannabis sativa*, *Urtica dioica*, etc. They are missing from the text and the photographs.

However, the authors should have consulted any '*Dravyaguna Vijñān*' book of Ayurveda before mentioning the names of a few Ayurvedic plants. This would have certainly

helped them, in naming important Ayurvedic plants, which are well illustrated in the book and would have enhanced the value of the book.

There only a few photographs of the underground parts like; *Coleus barbatus*, the root and rhizomatus parts are well illustrated because these are used in extraction of Forskolin. *Dactylorhiza hatagirea* is mentioned as '*Hatha jari*' which is '*Salam-panja*' of the market. Lastly, *Platanthera pachycaulon* (*Habinaria pachycaulon*) possibly root photographed due to its being part of *Aṣṭavarga* ? There are many plants whose underground parts have commercial value and are important in Ayurveda and used in '*havana sāmagri*'. These should have been photographed and described. This would have been the first attempt of a botanist and would have helped in identification of the commercially valued medicinal & aromatic plants.

The index of botanical names of plants the family has been prepared very hurriedly and under this many plants mentioned in the text are missing in the index.

In the end, whatever may be the technical short comings, the book would prove an asset to the students, research scholars, teachers, phytochemists, pharmacologists, foresters, plant breeders and herbalists, and even to the Ayurvedists, who can easily find their plants in the book through their botanical names as mentioned in '*Dravyaguna Vijñān*' books. It is worth to be included in the libraries of the institutions, who deal with botany, forestry and medicinal plants. Further, I believe it would be helpful to those pilgrims who visit Panch Kedar and are interested to know the plants of this region.