

Rediscovery of *Dactylorhiza kafiriana*, a lesser known orchid from Suru valley, Jammu and Kashmir, India^a

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Abstract

The present paper reports the presence of *Dactylorhiza kafiriana* Renz, a lesser known orchid from Suru valley in Jammu and Kashmir and deals with its taxonomic and ecological aspects.

Résumé

Redécouverte de *Dactylorhiza kafiriana*, une orchidée peu connue de Suru Valley – Le présent article enregistre la présence dans la Suru Valley, Etat de Jammu & Kashmir, de *Dactylorhiza kafiriana* Renz, une orchidée qui n'avait plus été observée depuis son signalement original par Renz en 1961. Des informations sur la taxinomie et l'écologie de cette orchidée peu connue sont proposées.

Introduction

The genus *Dactylorhiza* was described by Necker ex Nevski (1937), commonly called marsh orchid or spotted orchid. The name is derived from the Greek words *daktylos* (finger) and *rhiza* (root), referring to the palmately two to five lobed tubers. *Dactylorhiza* differs by its finger-like tuberoids from all other genera (Renz & Taubenheim, 1984). The genus

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comprises 75 species which are distributed mainly in Europe and Russia, extending east to Korea, Japan, and North America, and south to the alpine regions of sub-tropical Asia (Devos *et al.*, 2003). In India the genus is represented by 2 species, which are mainly distributed in the western part of the Himalayas (Deva & Naithani, 1986; Misra, 2007). It is characterized by palmately 2-5 finger-like tubers. The stem is solid and leafy. Usually, the leaves are crowded near the base. The inflorescence is a raceme. Generally, the flowers are rose-purple, and rarely white. The dorsal sepal is erect, connivent with slightly shorter petals, forming a loose hood; the lateral sepals are spreading. The lip has a basal spur and is entire or 3-lobed, with dark colored pattern of lines and dots. The column is short; the anther erect, bilocular, basally firmly united with the column. There are two clavate pollinia with caudicles, each with a separate viscid gland, both enclosed in a single pouch (bursicula). The stigma is entire and slightly concave.

Materials and methods

The authors have made a plant exploration expedition to the Suru valley in Jammu and Kashmir State of India in the year 2008 as a part of the Regional Rangeland Programme (RRP III) of the International Centre for Integrated Mountain Development (ICIMOD) and plants were collected (Fig. 1). After critical examination, one of the collected species was identified as *Dactylorhiza kafiriana* Renz. This species was reported from India from Kashmir by Renz in 1961 and after that no collection was made by any explorer. After a gap of 50 years, the *D. kafiriana* has now been rediscovered by us, and the voucher specimen has been deposited at WII (21807; Angmo, Adhikari and Rawat). The present paper deals with the description, distribution of this orchid species and its state of endangerment.

Results and discussion

Dactylorhiza kafiriana Renz in Rechinger, *Flora Iranica* 126:125 (1978); Deva & Naithani, *Orchid Flora of North West Himalaya* 111, t. 52 (1986).

Type: Chitral: Kafiristan, Renz 10272 (holo. G).

Description: terrestrial herb, 20-50 cm tall; leaves 3-6, adpressed to the stem, unspotted, lanceolate to broadly lanceolate, generally 6-15 cm long, and up to 5 cm broad; inflorescence broadly cylindric, rather short, 5-10 cm, densely many-flowered; bracts lanceolate, the lower exceeding the flowers; flowers purplish-lilac or rose, rarely white; dorsal sepal erect spreading,

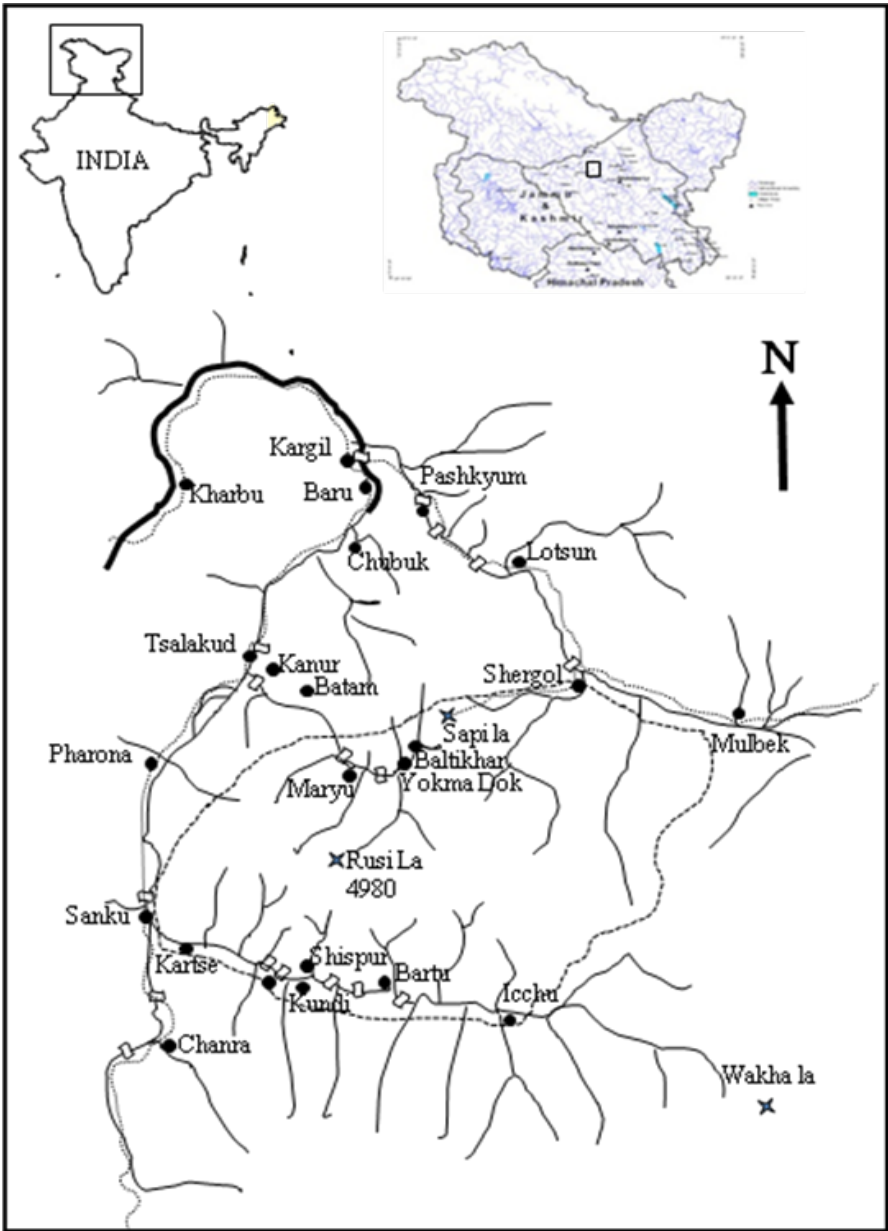


Fig. 1. Map showing the explored area, delimited by the dotted line

ovate-oblong to lanceolate; lateral sepals somewhat reflexed, slightly longer than the dorsal; petals slightly shorter; apex of dorsal sepal and petals hooded; lip obovate or rhomboidal, papillose and very clearly marked with few darker purple dots and lines, entire or faintly 3-lobed, mid-lobe somewhat elongated. Spur cylindric, pointed, often slightly curved (Fig. 2).

Specimen examined: WII-21807 (Suru valley - Angmo, Adhikari and Rawat, 2008, between 2700-4500 m. SOF- Renz 9976 (14 July 1961).

Distribution: India (Jammu & Kashmir), Pakistan (Chitral, Hunza and Gangangir - Sind valley), and Afghanistan.

Habitat: *Dactylorhiza kafiriana* grows in alpine wet/marshy meadows and along stream banks between 2700-4500 m with various plant species, viz. *Pedicularis punctata*, *Lotus corniculatus*, *Hippophae rhamnoides*, *Salix* spp., *Euphrasia*, *Trifolium repens*, *Plantago tibetica*, *Taraxacum officinale*, *Mentha longifolia*, *Equisetum arvense* and *Aster flaccidus*. At a few of its habitats, *Dactylorhiza kafiriana* was found to grow sympatrically with *Dactylorhiza hatagirea* (D. Don) Soo.

Threats: the habitat of *Dactylorhiza kafiriana* is facing numerous anthropogenic threats, such as use of wet meadows for agriculture purposes in the high altitude regions of the Suru valley and extensive use of marshy meadows for grazing. During the survey, we observed that the tubers were exposed to heavy trampling and as we know, the plants will be severely weakened if and when the tubers become exposed.

Furthermore, in some areas along the river bed, the land is covered by a carpet of moronic debris, an outcome of heavy melting in higher altitudes. These debris definitely disturb the growth of the plants and possibly even destroy a major part of the population of *D. kafiriana*.

Besides, we observed in some places that the water was channelled for the irrigation of agricultural plantations. From these areas, the water percolates down to the sloppy areas and makes the entire region very prone for landslides.

Finally, the tubers are collected as an aphrodisiac and for use in the treatment of various ailments by the traditional healers (Amchis).

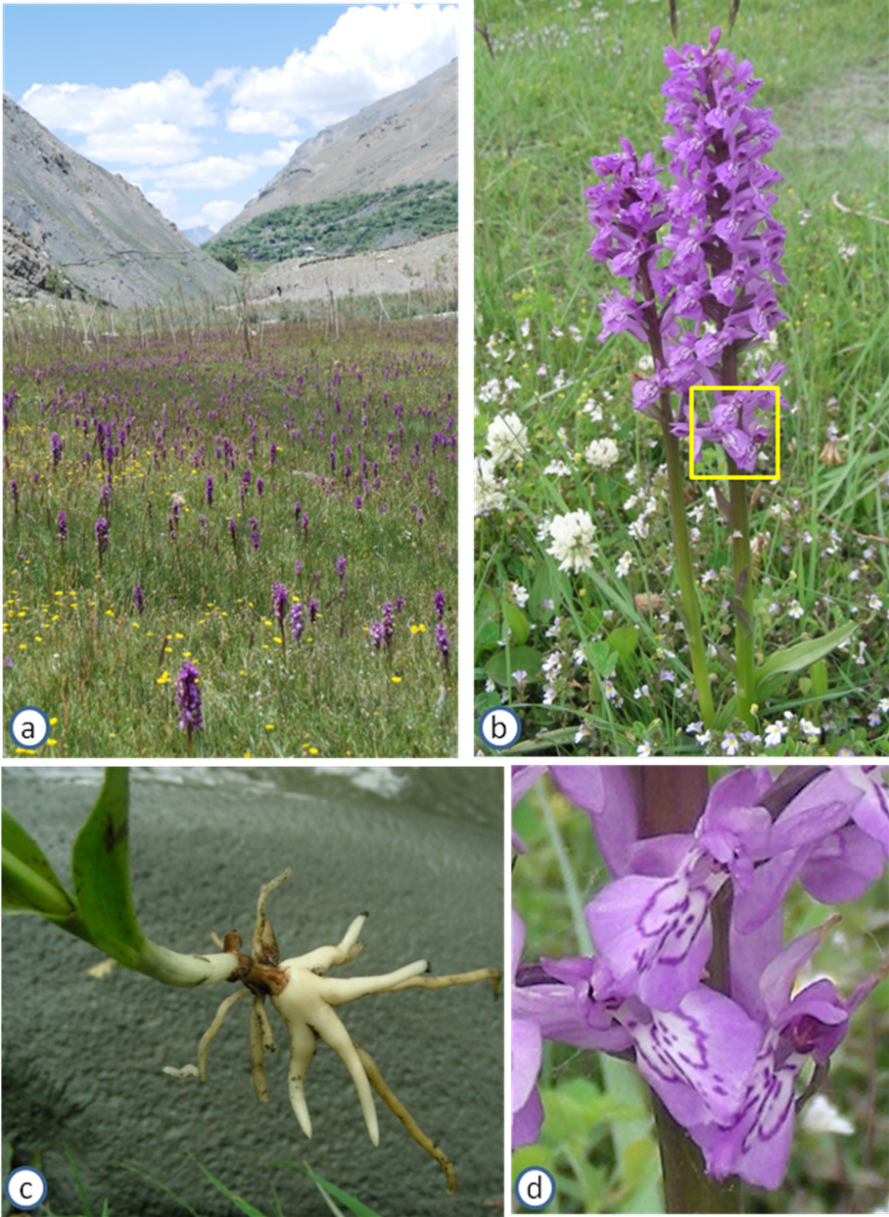


Fig. 2. *Dactylorhiza kafiriana* in marshy and wet habitats along the river bed near village Icchu (a), a mature plant (b), tuber (c) and close-up of the area delimited by yellow square (d). Flowering: June-July.

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