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BRACHYCORTHIS OBCORDATA (BUCH.-HAM. EX D.DON) SUMMERH. (ORCHIDACEAE): A NEW RECORD FOR JAMMU AND KASHMIR INDIA

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ABSTRACT

Brachycorthis obcordata a terrestrial, tuberous orchid is reported as a new record for Jammu and Kashmir flora from Chambitrar of Rajouri district. During the plants exploration we have identified the species *B. obcordata* which is new for the union territory of Jammu and Kashmir. The species is processed for herbarium deposition as per slandered protocols and preserved in the herbarium of Department of Botany, KLDVA P G College Roorkee Haridwar 247667 Uttarakhand India. The species is worked out for detailed taxonomic description, illustrations and geographic distribution is also provided in the manuscript.

Keywords: *Brachycorthis*, Orchidaceae, Flora, Jammu and Kashmir

INTRODUCTION

Brachycorthis is a small herbaceous orchid found in Africa and Asian regions of the globe. These are distributed throughout Himalaya. Out of a total of 33 species of *Brachycorthis*, 22 species have been reported from African and eleven from Asian regions so far. In India, there are seven reported species of *Brachycorthis* viz. *B. helferi*, *B. acuta*, *B. obcordata*, *B. splendid*, *B. iantha*, *B. galendra* and *B. wightii* (Rao, 2010).

Brachycorthis is characterized by the structure of the labellum i.e. inflated base or hypochile and the bluntly galeate perianth which is inserted very obliquely. However at that time (Lindley, 1838) saw only species (*B. ovata*) and generic characters were based on this only species. Although *Brachycorythis* shows similarities to *Platanthera* in number of characteristics, the fusion of petals with the lower part of column, the shape of column as tall and slender, the formation of hood by attachment of median and lateral sepal and distinctive habit differentiate it (Summerhayes, 1955). On the basis of their different floral structure (polysepalous conditions, sepals bigger than petals and oblique, lip spur presence and a fleshy callus with labellum) and habits, (Bentham and Hooker, 1883) demarcated *Schizochilus* from *Brachycorythis* and transferred *B. tenuior* Rchb. f. and *B. macowaniana* Rchb. f. from *Brachycorthis* to *Schizochilus*. According to (Engler 1895), *Brachycorthis* is a close ally of the genus *Platanthera*. He included spurred species to incorporate *B. tenuior* and *B. macowaniana*, besides *Schizochilus* into it. He excluded *B. tysonii* from *Brachycorythis* and added it to a new genus *Neobolusia* Schltr. (Rolfe 1898) placed the spurred species of *Brachycorythis* in *Platanthera*. Kraenzlin in 1898 included both spurred and non-spurred species in *Brachycorthis* and excluded *Schizochilus* and

Neobolusia. The species of *Brachycorthis* are terrestrial herbs having tuberous roots, while few are epiphytic. They grow in a variety of habitats and are usually wet including marsh/boggy grasslands, grassy swamps, damp pastures, marshes in forests, seepage areas among rocks, riverine forests and rainforests, scrubby and deciduous forests. Seven species are reported so far from India distributed in different states of Himalaya are; *Brachycorythis helferi* (Rchb. f.) Summerhayes, comb. nov. *Brachycorythis acuta* (Rchb. f.) Summerhayes, comb.nov. *Brachycorythis iantha* (Wight) Summerhayes, comb. nov. *Brachycorythis splendida* Summerhayes, sp.nov. *Brachycorythis galeandra* (Rchb.f.) Summerhayes, comb. nov. *Brachycorythis wightii* Summerhayes, sp.nov. *Brachycorythis obcordata* (Lindl.) Summerhayes, comb. nov.

In Jammu and Kashmir, there are a total of 48 species of orchids are reported till date (Jalal and Jayanti, 2011; Akhter *et al.*, 2015). No record of *Brachycorthis* is found so far from Jammu and Kashmir; this is the first time *Brachycorthis obcordata* is from this Union Territory. During the field exploration conducted in the Rajouri district of Jammu and Kashmir, we collected the *Brachycorthis* specimen having distinctive vegetative characteristics (like labelum) from the known orchids of the Union Territory. Based upon the characteristics described earlier by various workers (Lindely 1838; Bentham and Hooker 1838; Engler 1895; Rolfe 1895; Kraenzlin 1898; Summerhayes 1955; Rao 2010), in other part of the world; we concluded this specimen belongs to the genus *Brachycorthis* which is new for the said Union territory of Jammu and Kashmir. In the following, we provide a detailed description, illustration, color photographs, and brief notes about the ecology of this species.

The study is conducted in forests of Rajouri districts



Figure 1. *Brachycorthis obcordata* Summerh.: a. Habit ($\times 0.54$); b. Flower ($\times 0.33$); c. Flower and column ($\times 0.27$); d. Lateral sepals ($\times 0.25$); e. Dorsal sepal ($\times 0.38$).

in Jammu and Kashmir, during the plant exploration few flowering plants of the genus *Brachycorthis* were collected from Chambitral near Koteranka of Rajouri District at $33^{\circ}24'56''N$ $74^{\circ}24'42''E$ 1435 above msl, on 01 August 2020. The species was photographed in the field using camera Nikon B500. Morphological observations

and measurement of the species were recorded from living plant in the field. The plant is identified through online herbaria <http://plantsoftheworldonline.org/> and Summerhayes (1955). We conducted a careful comparison of the genus and species with the protologues and type material of the genus and all the species belonging to genus

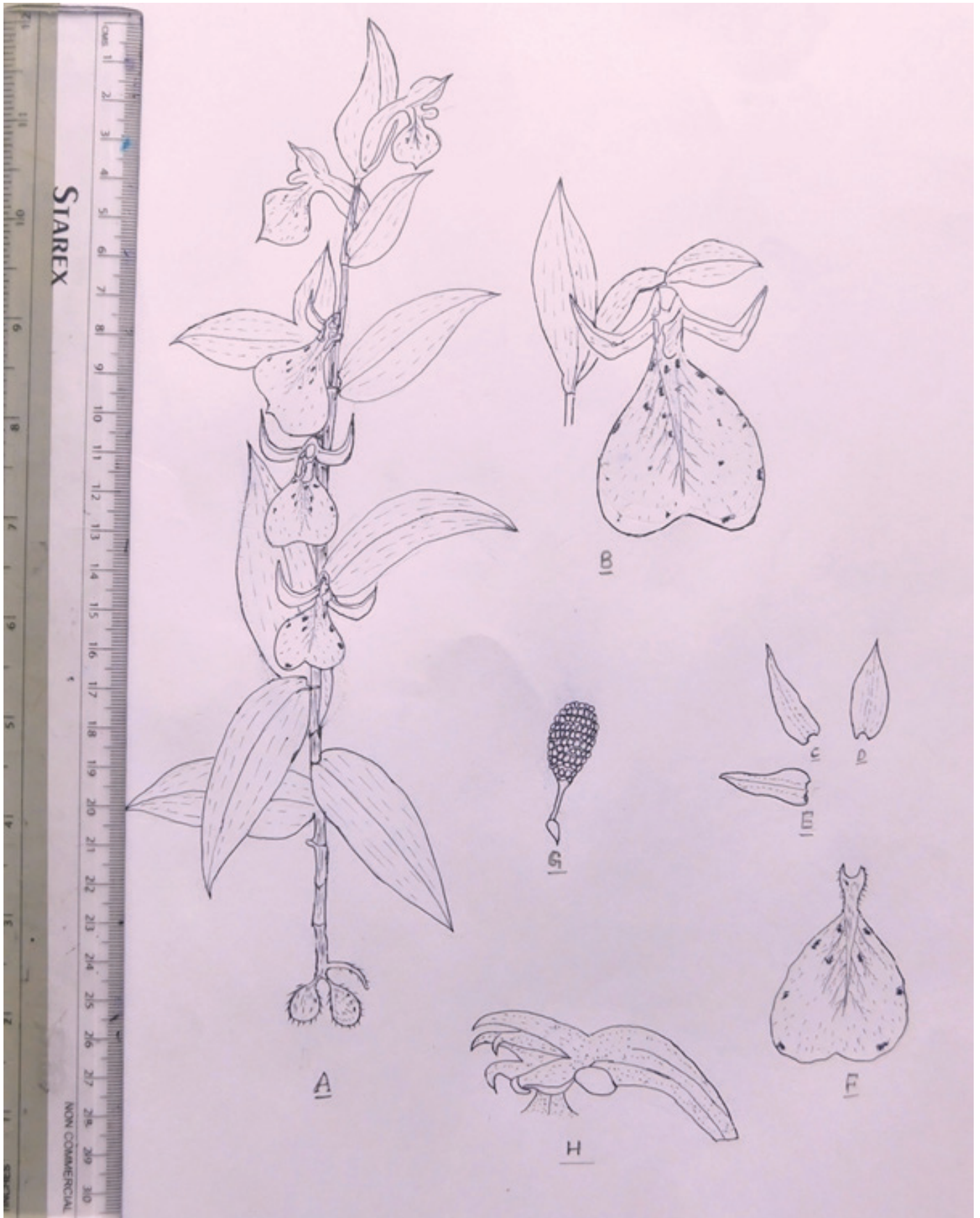


Figure 2. *Brachycorythis obcordata* Summerh.: a full plant ($\times 0.88$); b. Flower ($\times 0.15$); c. dorsal sepal ($\times 0.24$); d. Lateral sepal ($\times 0.18$) e. petal ($\times 0.2$); f. Lip ($\times 0.18$); g. Pollinium ($\times 0.057$); h. Column ($\times 0.025$).

Brachycorythis, as well as with regional floras. The species is processed for herbarium deposition as per standard protocols and preserved in the herbarium of Department of Botany, KLDV P G College Roorkee Haridwar 247667 Uttarakhand as voucher specimen.

Brachycorythis obcordata (Lindl.) Summerhayes, comb. nov. Kangra, Sahni ; between Kalka and Ruen Kor Tal, 1885, Drummond 26385 Simla, 1800 m. alt., in grass on sunny slopes, Aug. 1886, Collett 348 ; Simla, beyond Elysium, July 1917, Rich 664 ; Kunawar, N.E. of Simla,

1886, *Drummond* 2 2256 ; descent to Manglad Valley, N.E. of Simla, 1500 m. alt., Aug. 1847, *Thomson* 1815 ; Bunasur, 1680 m. alt., 1844, *Edgeworth* 3 5 ; Mussoorie, 1869, *King* (BM) ; same locality, 1650 m. alt., Aug. 1898, *McKinnon* 21755 (K, BM) ; Kumaon, 1832, *Wallich* 7050B (K, BM) ; Jagesu, 2100 m. alt., *Strachey & Winterbottom* 40 (K, BM) ; Gari Valley, Aug. 1900, *Inayat* 24064 ; Naini Tal, Shimala, July 1900, *Inayat* 8 ; Spiti valley, *Benham* (BM) ; Assam, Rupa, Balipara Frontier Post, 1800 m. alt., in open pasture or meadow, July 1938, *Ward* 13914 (BM).

Taxonomic Treatment: *Brachycorythis obcordata* (Buch.-Ham. ex D. Don) Summerhayes, *Kew Bull.* 10(2): 243.1955. *Phyllomphax obcordata* (Lindl.) Schltr. in Fedde, *Repert. Spec. Nov. Beih.* 4, 119 (1919), in obs. *Orchis obcordata* Buch.-Ham. ex D. Don, *Prodr. Fl. Nepal.* 23..1825., non Willem. (Which year) *Platanthera obcordata* Lindl. (Buch.-Ham. ex D. Don) *Gen. Sp. Orchid.* P1. 290.1835. *Gymnadenia obcordata* (Lindl.) Rchb. f., *Otia Bot. Hamburg.* 32.1878. *Habenaria obcordata* (Lindl.) Fyson, *Fl. Nilgiri & Pulney Hill-tops* 1: 405.1915 *Phyllomphax obcordata* (Lindl. Ex Wall.) Schltr., *Repert. Spec. Nov. Beih.* 4, 119.1919. in obs. (Fig. 1)

Terrestrial, tuberous herb, 5-22 cm tall. Tuber globose to cylindrical, 1 × 0.5 cm with short hairs. Roots 1cm long covered with hairs. Stem with bladeless sheaths at base, glandular-pubescent, c. 13 cm long; basal sheaths 2 or 3, overlapping, tubular, c. 1.5cm long. Leaves oblong-lanceolate, subacute to obtuse, sessile and sheathing at base, 2.4 - 5 × 1 -1.6 cm; sheath tubular, c. 1 cm long. Inflorescence sub densely few to many flowered; terminal raceme, rachis minutely glandular, pubescent, up to 8 cm long; bracts oblong-ovate to lanceolate, reduced near the rachis 0.7-2.3 × 0.3-0.4 cm. Flowers c.1 cm long, violet or pinkish. Dorsal sepal erect, ovate-lanceolate, 1-nerved, 4-6 × 1.5 mm; Lateral sepals ovate-lanceolate, acuminate, falcate, spreading, 1-nerved, 5-6 × 1.3 mm. Petals ovate-lanceolate, somewhat falcate, hooded with the dorsal sepal, 1-nerved, 3.5 - 4.5 × 1.6 mm. Lip simple to obscurely 3-lobed, spurred, broadly triangular to broadly obcordate, mucronate, papillose, 6-9 × 6 mm ; Spur short, conical, obtuse, white or green 3 mm long, mouth wide. Column 1.5- 2 mm tall; staminodes distinct, curved. Pollinia 2, cleft with short oblong caudicles and ovate viscidia at tips; staminodes 2, lateral erect, acute; rostellum very short, erect, acute, stigmatic surface flat. Ovary sessile, green, and prominently ridged, with capitate glands (Fig. 1 & 2).

Flowering and Fruiting: June to August.

Ecology: Terrestrial herb found on moist grassy slopes, along the foothill, shady places and nearby forests at around 1300 to 1700 m above sea level.

Distribution: Asia, Africa, Madagascar, Bhutan, Bangladesh, Myanmar and India. In India it is distributed in Arunachal Pradesh, Himachal Pradesh, Uttarakhand and Assam.

Specimen Examined: INDIA, **Jammu & Kashmir**, Rajouri, Chambitar near Koteranka, 33°24'56"N 74°24'42"E; 1435m, 01.08. 2020, *M Ahmed & M Dhiman* 009. Herbarium and illustrations submitted at KLDAP P G College Roorkee 247667, Uttarakhand India.

Note: The present finding signifies the addition of new orchid to the flora of J&K as the *B. obcordata* has never been reported from this state though this is reported from other states of the country at an altitude above 1500m. However this study confirms its occurrence at a height of 1435m from India.

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