

Note

Distribution Extension of *Paphiopedilum fairrieanum* (Lindl.) Stein (Orchidaceae: Cypripedioideae) and *Spathoglottis jetsuniae* Gyetlshen, Tobgyel & Dalström (Orchidaceae: Collabiinae) in Bhutan

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Abstract

Paphiopedilum fairrieanum (Lindl.) Stein and *Spathoglottis jetsuniae* Gyetlshen, Tobgyel & Dalström were recorded from Tsirang for the first time. They share same habitat in warm broadleaved forest having substrate of limestone.

Keywords: Extended distribution, *Paphiopedilum fairrieanum*, *Spathoglottis jetsuniae*

Introduction

Paphiopedilum fairrieanum (Lindl.) Stein (Figure 1) is a terrestrial orchid reported from Indian State of Sikkim, Arunachal Pradesh, Assam and from parts of Nepal (Raskoti and Ale, 2011; Tshering *et al.*, 2022). It is also found in Bhutan (Pradhan, 1976, 1978, 1996; Chowdhery, 1998; Cribb, 1998; Pearce and Cribb, 2002; Rankou and Kumar, 2015). While Rankou and Kumar (2015) noted that the species is possibly extinct in Bhutan; Gurung (2006), Gurung *et al.* (2016) and Gurung *et al.* (2019) have reported its existence from various locations in Bhutan.

Similarly, *Spathoglottis jetsuniae* Gyetlshen, Tobgyel & Dalström (Figure 2) is another

beautiful orchid found in Bhutan. Govaerts (2017) reported that there are over 50 different species of *Spathoglottis* including some hybrids distributed across sub-tropical SE Asia – including India, Nepal and Bhutan; China, Indonesia, New Guinea, Australia, and the Pacific Islands. In Bhutan, *Spathoglottis jetsuniae* is recorded from two sites – Martsala and Sarjung in Samdrup Jongkhar District and Nangla-Trong of Zhemgang District (Gyetlshen *et al.*, 2017).

Distribution in Bhutan

In Bhutan, *Paphiopedilum fairrieanum* is reported from Surelakha in Sarpang District (Pearce and Cribb, 2002), Gomdar, Martsala, Sarjung, and Wangphu in Samdrup Jongkhar District (Gurung, 2006; Samdrup *et al.*, 2020), Kalikhola in Dagana District (Dorji, 2008), Nangla and Kaktong in Zhemgang, Gongdu in Mongar District, and Gomtu under Samtse District (Gurung *et al.*, 2019).

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It is also reported from Athang in Wangdue Phodrang District that is under Jigme Singye Wangchuck National Park and Nganglam in Pemagatshel District (Tshewang pers. Com.). However, there is no recent report of its occurrence in Surelakha area even though there is a limestone belt existing in the region.

Paphiopedilum fairrieianum and *Spathoglottis jetsuniae* both have limited distribution range and share similar habitats. These orchids were observed flowering in Barshong during the second National Forest Inventory at an elevation of 1491 metre above sea level.

Habitat Preference

Paphiopedilum fairrieianum prefers subtropical forest having limestone substrate (Pearce and

Cribb, 2002). Samdrup *et al.* (2020) reported that the species occurs on outcrops of limestone facing east and south-east aspects. Also, Gyeltshen *et al.* (2017) mentioned that the *Spathoglottis jetsuniae* co-exists with *P. fairrieianum* on the outcrops of limestone substrate. In Tsirang, both the species occur on outcrops of limestone substrate covered with mosses and lichens in warm broadleaved forest, sharing similar ecological conditions. The habitat is dominated by *Callicarpa arborea*, *Quercus glauca*, *Rhus chinensis* and *Morella esculenta*. Shrubs such as *Viburnum cylindricum* and understory species including *Cyperus* sp., *Ophiopogon* sp., *Cynodon* sp., *Sarocalamus racemosus* and *Polygonatum* sp. are found. Some herbaceous species such as *Thalictrum* sp., *Asparagus* sp., *Impatiens* sp., *Begonia* sp. and *Strobilanthes* sp. are also present.

Since these orchids occur over limestone substrate and many limestone areas are poten-



Figure 1: *P. fairrieianum* from Tsirang



Figure 2: *S. jetsuniae* from Tsirang

tial sources for limestone mining, it is important to assess the area thoroughly if the area is to be leased out for quarries and brought under developmental purposes. Sources from Dagana indicate that *Paphiopedilum fairrieanum* occurs on steep and remote terrain only. Perhaps, it is good to identify some of these critical habitats and protect them by engaging local communities.

Conclusion

Information on these Critically Endangered orchids provides the conservationists a hope to protect these species and their habitats. Currently, it appears that their habitat is highly scattered. As the species prefer limestone out-

crops, effort should be made to search and protect them along with their habitats. Extensive and thorough survey of limestone areas should be conducted prior to issuing environmental clearance for mining and developmental activities.

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