

Lectotypification of *Boschniakia himalaica*, the basionym of *Xylanche himalaica* (Orobanchaceae)

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Abstract: A lectotype is designated here for the name *Boschniakia himalaica* Hook.f. & Thomson, the basionym of *Xylanche himalaica* (Hook.f. & Thomson) Beck.

Keywords: *Boschniakia himalaica*, Lectotype.

Introduction

Beck (1890) described the genus *Xylanche* Beck based on *Boschniakia himalaica* Hook.f. & Thomson which was segregated from *Boschniakia* C.A.Mey. ex Bong. in having tricarpetate pistils. Phylogenetic evidence (Wolfe *et al.*, 2005; Bennett & Mathews, 2006; Park *et al.*, 2008) also supported segregation of *Xylanche* from *Boschniakia*. However, the molecular work by McNeal *et al.* (2013) did not support segregation of *Xylanche* and they used *B. himalaica* and *B. rossica* (Cham. & Schltdl.) B.Fedtsch. under genus *Boschniakia*. However, Piwowarczyk (2015) carried out seed morphological studies of *Boschniakia s.l.* which supported a segregation of *Xylanche* from *Boschniakia*.

Xylanche is represented by the sole species *X. himalaica* (Hook.f. & Thomson) Beck distributed mostly in temperate and subalpine Himalayas, to altitudes over 4000 m (Nepal, Bhutan, India, and China) with disjunct distribution in Taiwan (Piwowarczyk, 2015). In India, the species is

restricted to Arunachal Pradesh, Meghalaya, Sikkim and Uttarakhand (Anilkumar, 2000).

While working on the genus *Boschniakia* for the Flora of India, the authors found that the name *Boschniakia himalaica* Hook.f. & Thomson appears to be as yet untypified (Smith, 1933; Zhang, 1987; Anilkumar, 2000; Yu, 2013; Collins *et al.*, 2019). After critical studies of type specimens and comparison with the protologue, a lectotypification is presented here in accordance with the Art. 7.11 of the Shenzhen Code (Turland *et al.*, 2018).

Typification

Boschniakia himalaica Hook.f. & Thomson in Hook.f., Fl. Brit. India 4: 327. 1884 (= **Xylanche himalaica** (Hook.f. & Thomson) Beck, Biblioth. Bot. 4(19): 58. 1890). *Lectotype* (designated here): INDIA, **Sikkim**, Lachen valley, 12000 ft., associated with roots of *Rhododendron* sp., *s.d.*, J.D. Hooker *s.n.* (K [K000938934 digital image!]). *Residual syntypes*: INDIA, **Sikkim**, 10–12000 ft., *s.d.*, J.D. Hooker *s.n.* (CAL [CAL0000019107!], CAL0000019108!], E [E00273644 digital image!], GH [GH00914299 digital image!], K [K000938933 digital image!], M [M0185512 digital image!], MPU [MPU021194 digital image!], P [P02968827, P02968828 digital images!], S [S11-7045 digital images!]); Singaleh [Singalila], 12000 ft., “on roots of *Rhododendron*”, 08.10.1870, C.B. Clarke 13424 (CAL [CAL0000019106!]); Jongri, 13000 ft., 15.10.1875, C.B. Clarke 25743 (K [K001392680 digital image!]); C.B. Clarke 25812 (K [K001392681 digital image!]). **Uttarakhand**, Kumaon, Dwali,

8300 ft., R. Strachey & J.E. Winterbottom 2 (GH [GH00914298 digital image!], K [K001392697 digital image!]).

Fig. 1

Notes: Hooker and Thomson (1884) described *Boschniakia himalaica* based on the collections of J.D. Hooker and C.B. Clarke from Sikkim and R. Strachey & J.E. Winterbottom from Garhwal and Kumaon. We traced a total of 14 herbarium sheets (four at K, three at CAL, two at P and one each at E, GH, M, MPU and S). At K one sheet is a mixed collection, with the right-most specimen representing a J.D. Hooker collection (K000938933), while the other five specimens belong to R. Strachey & J.E. Winterbottom collection (K001392697). The sheet K000938934 bears flowering and fruiting fragments, a label with the name "*Boschniakia himalaica*" and altitude "10-12000 ped", and a second label with the annotation "*Rhododendron* roots", "Lachen valley", "12000 ft.", all in Hooker's handwriting. Moreover, it also bears

an annotation of Collins *et al.* in 2015 as syntype for the Flora of North America Project, but this species was not treated by Collins *et al.* (2019) in the Flora of North America. All the remaining sheets collected by Hooker at CAL, E, M, MPU, P and S bear Hooker's collection label with the name "*Boschniakia himalaica*" and altitude "10-12000 ped" in Hooker's handwriting. The sheet CAL0000019106 collected by C.B. Clarke from "Synglelah, Sikkim" at an altitude of 12000 ft. is in brittle condition and devoid of flowers and fruits. There are two sheets of C.B. Clarke collected from Jongri at K of which the sheet K001392680 bears drawings with notes in Clarke's handwriting, and the sheet K001392681 bears the annotation "A genus of Hooker & Thomson grows on roots of *Rhododendron*" in Clarke's handwriting. Both sheets are without any annotation by Hooker. Thus, the well preserved specimen on sheet K000938934 bearing Hooker's annotation is selected here as lectotype.



Fig. 1. Lectotype of *Boschniakia himalaica* (K000938934). © The Board of Trustees of the Royal Botanic Gardens, Kew. <http://specimens.kew.org/herbarium/K000938934>

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