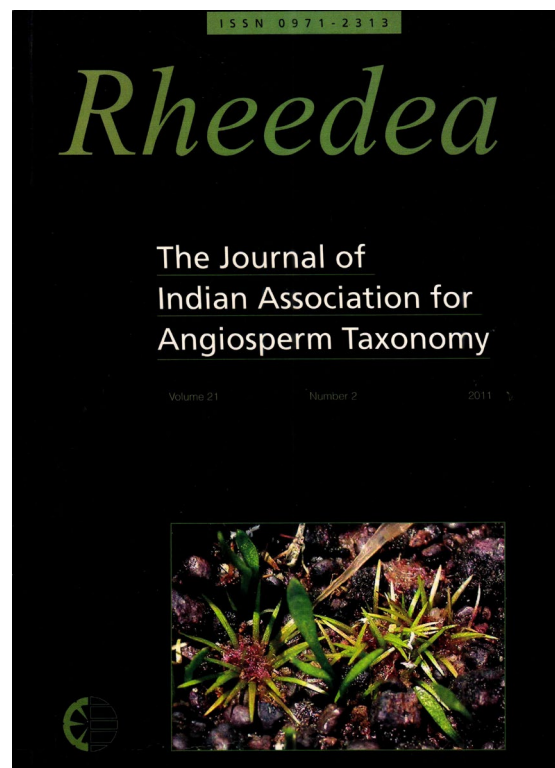




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# *Arnebia griffithii* (Boraginaceae): A new record for India from Himachal Pradesh

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## Abstract

*Arnebia griffithii* Boiss. (Boraginaceae) is reported here as a new record to the flora of India from Spiti, Himachal Pradesh. It is earlier known to occur in Afghanistan and Pakistan. A detailed description, illustration and distribution of the species are provided.

**Keywords:** *Arnebia griffithii*, Boraginaceae, Himachal Pradesh, India, New Record

## Introduction

*Arnebia*, an economically important genus of Boraginaceae, was established by Pher Forsskål in 1775. The genus is represented by c. 25 species (Mabberley, 2008) and known to occur from North Africa to Central Asia and the Himalayas (Kazmi, 1971). Only six species of *Arnebia* have so far been reported from India (Chandra Sekar & al., 2009; Kumar & Srivastava, 2010).

While scrutinizing the taxa of Boraginaceae in the Herbarium of Botanical Survey of India, Dehradun (BSD), the authors have come across an interesting specimen of the genus *Arnebia* collected by S.K. Murti & Surendra Singh from Kaurik, Spiti in Himachal Pradesh which was identified as *Arnebia guttata* Bunge. A critical study of the specimen comparing with the type image procured from GH with other allied species of the genus housed at BSD, CAL and DD and perusal of existing literature (Hooker, 1883; Johnston, 1952; Kazmi, 1971; Stewart, 1972; Nasir, 1989) revealed that the specimen was erroneously identified as *A. guttata* Bunge. The specimen is now correctly identified as *A. griffithii* Boiss. The differences between *A. guttata* and *A. griffithii* are shown in Table 1.

*Arnebia griffithii* is so far known from Afghanistan and Pakistan. Hence, the present collection from Himachal Pradesh, forms a new record to the flora of India. A detailed description and illustration (Fig. 1) are provided to facilitate easy identification and relocation of this species in the field. The scanned image of the isotype of *A. griffithii* from GH is provided for authentication (Fig. 2).

*Arnebia griffithii* Boiss., Diagn. Pl. Orient. 3: 135. 1856 & Fl. Orient. 4: 213. 1875; C.B. Clarke in Hook.f., Fl. Brit. India 4: 176. 1883; Riedl in Rechinger, Fl. Iranica 48: 156. 1967; Kazmi, J. Arnold Arbor. 52: 492. 1971; Stewart in Nasir & Ali, Annot. Cat. Vasc. Pl. W. Pak. & Kashmir: 582. 1972. *Echioides griffithii* (Boiss.) Rothm., Repert. Spec. Nov. Regni Veg. 49: 56. 1940. *Lithospermum griffithii* (Boiss.) I.M. Johnst., J. Arnold Arbor. 33: 326. 1952. **Fig. 1**

Annuals, c. 25 cm high with slender purple dye-stained tap root. Stems single or ascendingly branched, to 12 cm long, uniformly, densely covered with 1.5 – 2 mm long, stiff, tubercle-based white trichomes; lower branches to 5.5 cm long; upper branches to 12 cm long. Leaves sessile; basal leaves unequal, linear-oblong or oblong-obovate, 2.2 – 4.5 × 0.2 – 0.4 cm, narrowed or attenuate at base, entire at margins, obtuse at apex, both surfaces and margins covered with spreading or thick, 1.5 – 2 mm long, tubercle-based white trichomes, emerging from thick tuberculate base; cauline leaves usually equal, linear-oblong, 1.3 – 1.5 × 0.1 – 0.2 cm, narrowed at base, obtuse at apex; trichomes on both the surfaces usually similar as on basal leaves. Inflorescences a cyme, terminal or subterminal, 6.5 – 8.5 cm long, congested; bracts leafy, linear or linear-lanceolate, to 1.2 cm long. Flowers sessile, distant, c. 1.5 cm long. Calyx 5-lobed; lobes linear-lanceolate, 6 – 8 mm long, obtuse at apex, densely hairy. Corolla tubular, yellow; tube slender, 15 – 18 mm long, glabrous at throat; limb 7 – 9 mm across, five purple-spotted, obtusely 5-lobed; lobes broadly ovate or subro-

Table 1. Distinguishing characters between *Arnebia guttata* Bunge and *A. griffithii* Boiss.

Characters	<i>Arnebia guttata</i>	<i>Arnebia griffithii</i>
Habit	Perennial, loosely branched	Annual, compactly branched
Basal leaves	Oblanceolate, usually absent during anthesis	Linear-oblong, usually persistent
Corolla	12 – 14 mm long; lobes rounded without spots	15 – 18 mm long; lobes broadly ovate with 5 purple spots
Style	Twice bifid	Bifid

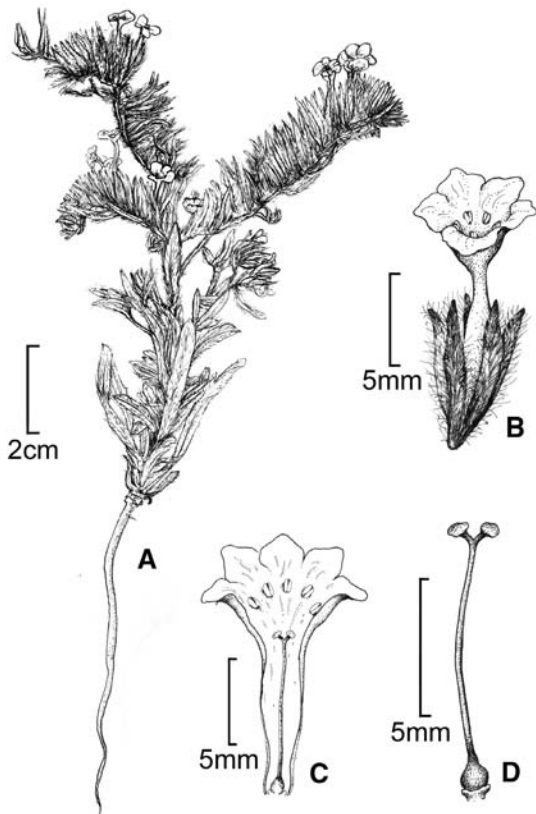


Fig. 1. *Arnebia griffithii* Boiss.: a. Habit; b. Flower; c. Corolla split-open; d. Pistil.

tund, entire at margins. Stamens exserted; anthers ovoid, small, adnate to just middle of corolla lobes. Style filiform, c. 8 mm long; stigmas 2, uniform, reniform, compressed, bifid. Nutlets c. 2 mm long, lustrous, tuberculate, brown.

**Flowering & Fruiting:** August – September.

**Habitat:** Open dry sandy slopes, c. 2400 m.

**Distribution:** India (Spiti, Himachal Pradesh), Afghanistan and Pakistan. Cooke included this species in his Flora of the Presidency of Bombay (2: 221. 1908), based on an earlier collection from present day Pakistan the exact locality of which he could not ascertain.

**Specimens examined:** INDIA, Himachal Pradesh, Spiti, Kaurik, 2400 m, 21.8.1994, S.K. Murti & Surendra Singh 81582 (BSD). AFGHANISITAN, without precise locality, 1862 – 1864, Griffith 5953 (CAL, DD, Isotypes!). PAKISTAN, Waziristan, Nai Ubbo, 20.5.1897, Harsukh 20593 (CAL); Peshawar, 4000 ft., 1891, H.G. Praves s.n.; Rawalpindi, 24.3.1871, J.E.T. Aitchison 1081 (DD).



Fig. 2. *Arnebia griffithii* Boiss. (Isotype Image from GH)

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