



Aruncus gombalanus (Rosaceae) – A new record for India

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Abstract

Aruncus gombalanus (Hand.-Mazz.) Hand.-Mazz. (Rosaceae), previously known only from China is reported here for the first time from India. Detailed description with colour photographs is provided.

Keywords: *Aruncus gombalanus*, India, New Record, Rosaceae

Introduction

Aruncus L. (Rosaceae), formerly treated as a section of *Spiraea* L. is a small genus with four inadequately defined species, viz., *A. aethusifolius* Nakai, *A. dioicus* (Walt.) Fernald, *A. gombalanus* (Hand.-Mazz.) Hand.-Mazz. and *A. sylvester* Kostel. *Aruncus aethusifolius* Nakai an endemic to Korea, was described originally as *Astilbe thunbergii* Miq. var. *aethusifolius* H. Lev. *Aruncus dioicus* (Walt.) Fernald with many varieties assigned to it, is reported to occur in Asia, Europe and North America. It was originally described from Carolina, USA as *Actaea dioica* Walt. (Ranunculaceae). *Aruncus sylvester* Kostel. ex Maxim. described from Austria is morphologically very diverse (Fig. 1e). Many taxonomists consider it as a morphological extreme form of Asian *A. dioicus*. *Aruncus gombalanus* prior to this report was known to occur only in China. Two of the four species, viz., *A. aethusifolius* and *A. dioicus* were initially described under Saxifragaceae and Ranunculaceae respectively due to their unique appearance, and were later transferred to Rosaceae.

The critical study of specimens collected by senior author from Arunachal Pradesh, scrutiny of protologue and other literature (Gu Cuizhi & Alexander, 2003) revealed that these belong to *A. gombalanus*. The identity was further confirmed by comparing with the image of holotype of *A. gombalanus* (WU 0059457!), images of 23 specimens at PE and 4 specimens at A. The identity of the specimens was also confirmed by Dr. Zhi-Rong Yang of The National Herbarium (PE), Institute of Botany, Chinese Academy of Sciences, Beijing, China.

Aruncus gombalanus was earlier known to occur only in China. Scrutiny of literature (Hooker, 1878; Chowdhery *et al.*, 1996) revealed that it was not reported from India earlier. Hence, the present collection forms a new record for India. A detailed description along with colour photographs of flowering and fruiting specimens is provided here for easy identification.

Key to Indian species of *Aruncus*

1. Stems, petioles and rachises red; leaves broadly ovate, rounded, obtuse or rarely acute at apex; inflorescences compact; seeds 2 per follicle
..... **A. gombalanus**
1. Stems, petioles and rachises green; leaves narrowly lanceolate, long-acuminate at apex; inflorescences lax; seeds 3 – 5 per follicle
..... **A. sylvester**

Aruncus gombalanus (Hand.-Mazz.) Hand.-Mazz., Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 60: 152. 1924; T.C. Ku & C. Alexander in C.Y. Wu & P.H. Raven, Fl. China 9: 75. 2003. *Pleiosepalum gombalanum* Hand.-Mazz., Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 59: 139. 1922. *Aruncus dioicus* (Walt.) Fernald var. *rotundifoliolatus* H. Hara, J. Jap. Bot. 30(3): 69. 1955. **Fig. 1a – d**

Undershrubs, perennial, 20 – 80 cm high. Stems pubescent when young, red. Leaves ternate or biternate; leaflets broadly ovate, terminal one larger than lateral ones, 2.5 – 4.5 × 1.7 – 3.7 cm, mostly unequally cuneate at base, serrate-dentate or bidentate at margins, rounded, obtuse or



Fig. 1a – d. *Aruncus gombalanus* (Hand.-Mazz.) Hand.-Mazz.: a. Plant in natural habitat; b. Fruiting twig; c. Flowering twig; d. Fruits magnified; e. *Aruncus sylvester* Kostel. ex Maxim.: A flowering twig.

occasionally acute at apex, glabrous above, densely pubescent along nerves below; lateral petiolules absent or to 6 mm long; terminal petiolules 6 – 20 mm long. Inflorescences a panicle, terminal, 6 – 12 cm long, dense; rachis densely pubescent; bracts oblong, to 2 mm long, acute at apex, glabrous, red. Flowers sessile or short-pedicellate (to 3 mm long), unisexual. Hypanthium cupular. Sepals 5, lanceolate, *c.* 1 mm long, acute at apex, spreading or reflexed in fruits, persistent, glabrous, red. Petals 5, alternate to sepals, obovate, *c.* 2 × 0.5 mm, obtuse at apex, spreading, white. Male flowers: Stamens 15 – 20, longer than petals, spreading; anthers dorsifixed, 2-celled, longitudinally dehiscent. Female flowers: Carpels 3 – 6; ovary glabrous. Follicles parallel, drooping, glabrous, ventrally dehiscent; seeds 2 in each follicle.

Flowering & Fruiting: July – September.

Habitat: Open alpine meadows and near water bodies.

Distribution: India (Arunachal Pradesh) and China.

Specimens examined: INDIA, **Arunachal Pradesh**, Upper Siang district, Kanebango to Teetapuri, 28°59' N & 95°08' E to 29°57' N & 95° 15' E, 3300 – 4000 m, 9.9.2009, *M.K. Pathak* 73370 (in fruiting); Sitoma/Tarutoma to Ruitala/Ekodumbing, 3500 – 4500 m, 28°44.139' N & 95°10.020' E to 28°43.189' N & 95°10.610' E, 22.7.2010, *M.K. Pathak* 73019 (in flowering); Pemashree proper, 4000 – 4500 m, 11.9.2011, *M.K. Pathak* 54240 (in fruiting) (CAL).

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Literature Cited

- Chowdhery, H.J., Giri, G.S., Pal, G.D., Pramanik, A. & S.K. Das (Ed.) 1996.** *Materials for the Flora of Arunachal Pradesh*. Vol. 1. Botanical Survey of India, Kolkata. pp. 415 – 448.
- Gu Cuizhi & C. Alexander 2003.** Rosaceae. In: Wu, C.Y. & P.H. Raven (Eds.), *Flora of China*. Vol. 9. Science Press, China & Missouri Botanic Garden Press, New York. pp. 46 – 434.
- Hooker, J.D. 1878.** *The Flora of British India*. Vol. 2. L. Reeve & Co., Ltd., London. pp. 307 – 388.

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