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A New Species of *Aralia* [Araliaceae, Sect.: *Pentapanax* (Seem.) J. Wen] from Jammu & Kashmir, North-west Himalaya, India

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ABSTRACT: A new species of *Aralia* (Araliaceae, Sect.: *Pentapanax* (Seem.) J. Wen), *A. devendrae* Pusalkar is described and illustrated from Jammu & Kashmir, North-west Himalaya, India. The present novelty differs from allied *A. kingdon-wardii* J. Wen, Lowry & Esser in herbaceous climbing habit; hollow, ribbed stem; leaflet margins serrulate, serrate to biserrate, apex acute or subacute, surfaces glabrous or with microscopic pilli on veins; inflorescence axis and pedicels moderately pilose; umbels corymbosely arranged on panicle branches; fruits with stylopodium-like crown and styles free for half the length.

KEY WORDS: *Aralia*, *Aralia devendrae*, Araliaceae, North-west Himalaya, Kashmir, India.

INTRODUCTION

The Genus *Aralia* L. (incl. *Pentapanax* Seem.) [Araliaceae] is represented by more than 50 species in world distributed in N. America, E. Asia, China and Indo-Malaya (Mabberley, 1997). In India, the genus is represented by 11 species (Wen et al., 2002) belonging to 3 sections, viz., *A. cachemirica* Decne, *A. tibetana* G. Hoo [sect.: Aralia]; *A. armata* (Wall. ex G. Don) Seem., *A. foliolosa* Wall. ex C.B. Clarke, *A. malabarica* Bedd., *A. thomsonii* Seem. ex C.B. Clarke [sect.: Dimorphanthus (Miq.) Miq.]; *A. gigantea* J. Wen, *A. kingdon-wardii* J. Wen, Lowry & Esser, *A. leschenaultii* (DC.) J. Wen, *A. subcordata* (Wall. ex G. Don) J. Wen and *A. parasitica* (D. Don) J. Wen [sect: Pentapanax (Seem.) J. Wen]. During routine identification in the Herbarium of the Botanical Survey of India, Northern circle, Dehradun (BSD), one unidentified collection of *Aralia* collected from Jammu and Kashmir was found to be morphologically different from all the known species of the genus. Literature consultation (Clarke, 1879; Ghazanfar, 1975; Poyarkova, 1986; Wen et al., 2002; Xiang and Lowry, 2007) revealed it to be hitherto undescribed, hence the same is described and illustrated here as *Aralia devendrae, sp. nov.* The novelty belongs to the section *Pentapanax*, which is often treated as a distinct genus, but following morpho-taxonomic and molecular evidences provided by J. Wen (1993), *Pentapanax* is treated here as a section under *Aralia*. Table 1 showing comparative account with the allied species *A. kingdon-wardii* is provided, followed by the Key to the species of *Aralia* in India with distributional range and discussion on the relationship with other related species.

Aralia devendrae Pusalkar, *sp. nov.* Fig. 1

Aralia devendrae Pusalkar *sp. nov*. Ab *Araliae kingdon-wardii*, habitu perenni, herbaceo; caule costato, cavo; foliolo apice acuto ad subacuto; axe inflorescentiae et pedicello bono modo piloso; inflorescentiis axillarum umbellis corymboso-paniculate cum inflorescentiis apicum umbellis unice dispositis; fructibus apice stylopodio-simile coronatis et stylis infero-dimidia liberis differt.

Type (here designated): India, Jammu & Kashmir, Kodara, 27/09/1986, *B.M. Wadhwa* 84106 (holotype & isotype: BSD)

Perennial, robust, herbaceous climber; stem profusely branched, glabrous, green, conspicuously or inconspicuously ribbed, hollow. Leaves alternate, exstipulate, petioled; rachis glabrous, not articulated; trifoliate (becoming 2-foliate or simple in inflorescence); lateral leaflets opposite, sessile, subsessile or petioluled; petiolule up to 1.5 cm long, glabrous; lamina ovate-oblong, oblong, oblong-lanceolate, 6–15 x 3–7.5 cm, base rounded, cordate or cuneate, unequal, margins serrate, serrulate or biserrate, apex acute or subacute, rarely notched, surfaces glabrous or with microscopic pilli on veins, surface dark above, pale beneath, primary lateral veins 7–9 pairs, some lateral veins conspicuously visible only for half the length; terminal leaflet larger than lateral, petioluled; petiolule of terminal leaflet shorter than leaf petiole; lamina ovate-oblong, oblong, oblong-lanceolate, 10–20 x 5–10 cm, base cordate, apex acute or subacute, surfaces and margins similar to lateral leaflets; floral leaves simple, ovate below, ovate-lanceolate to lanceolate above, base rounded or cordate, margins serrate or serrulate, apex acute, surfaces glabrous or with microscopic pilli on veins. Inflorescence a compound panicle, 25–35 cm long with axillary branches bearing corymbosely arranged five umbels and terminal, simple, solitary peduncled umbel; inflorescence axis flexuose, often twisted, moderately pilose; terminal umbel much exceeded by sub-terminal panicle branches; primary panicle branches 5–12 cm long; umbels 1–3.2 cm across,

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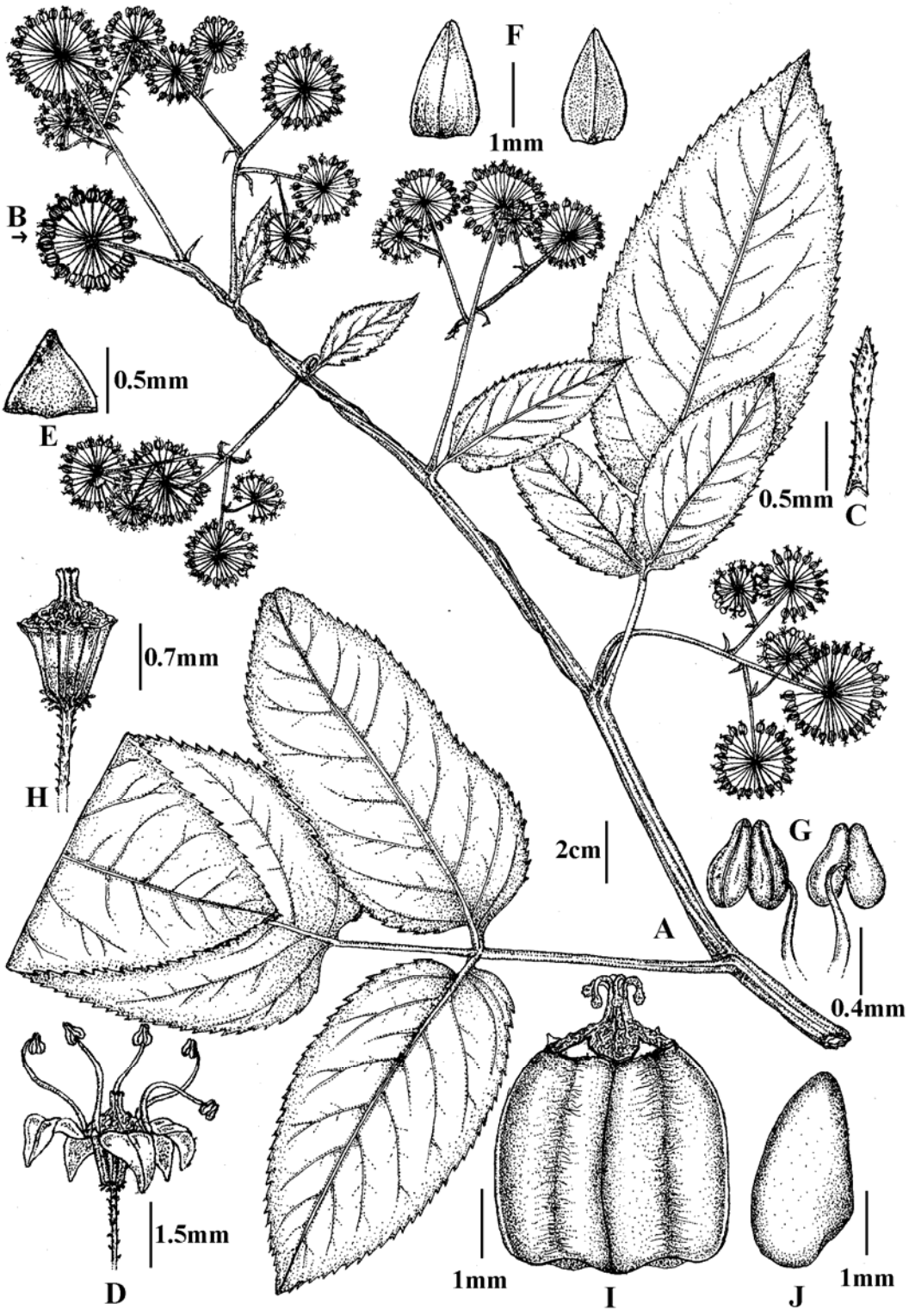


Fig. 1. *Aralia devendrae*. A: Flowering branch. B: Terminal umbel. C: Bracteole. D: Flower. E: Sepal. F: Petal (variation). G: Stamen (front & back view). H: Carpel. I: Fruit. J: Seed.

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Table.1 Comparison of distinguishing characters of *A. kingdon-wardii* and *A. devendrae.*

Aralia kingdon-wardii	*Aralia devendrae*
Shrub, epiphytic or climbing	Herbaceous (perennial) climber
Stem solid	Stem hollow, ribbed
Leaflet margins sharply ciliate	Leaflet margins serrate, serrulate or biserrate, not ciliate
Leaflet apex acuminate	Leaflet apex acute or subacute
Leaflet surfaces glabrous	Leaflet surfaces glabrous or with microscopic pilli on veins
Inflorescence axis and pedicels glabrous	Inflorescence axis and pedicels moderately pilose
Umbels racemosely arranged on panicle branches	Umbels corymbosely arranged on panicle branches
Fruits without stylopodiun-like crown	Fruits with stylopodium-like crown
Styles united for most of the length, slightly free above	Styles free for half the length

peduncled; terminal 25–60-flowered; ultimate lateral 20–30-flowered; peduncles of umbels 1–3 cm long, pilose; bracteoles linear-subulate or linear-spathulate, 1–2 mm long, pilose on outer surface and on margins; pedicels 5–12 mm long, pedicel enlarged and articulated below ovary, moderately pilose with pilli conspicuously gathered at the base of ovary; pedicels usually persistent with inflorescence. Flowers white, 2.5–4 mm long, 3–5 mm across. Sepals 5, triangular or triangular-ovate, 0.5–0.8 x 0.3–0.6 mm, apex acute or subacuminate, margins entire, pale, outer surface glabrous or sparsely pubescent, persistent with fruits. Petals 5, white, alternisepalous, usually reflexed, ovate-oblong to oblong-lanceolate, 1.5–2.3 x 0.8–1.2 mm, apex acute, subacute or obtuse, surfaces glabrous, inner surface keeled; quincuncialis in bud. Stamens 5, alternipetalous (oppositisepalous), exerted, exceeding the petal length, dorsifixed; filaments flat, 1.6–3 mm long, glabrous; anthers white, ovate or suborbicular-ovate, 0.4–1 mm long, glabrous; antherlobes oblong, slightly narrowed above. Carpels 5; ovary 1–1.7 mm long; lower part 5-ridged, slightly expanding above, glabrous or sparsely pappillate; upper stylopodium-like crown 0.2–0.7 mm long; styles 5, united below, free above with nearly incospicuous stigmas. Fruits globose, apparently ovate in side view, 3.8–5 x 2–5.2 mm, 5-ridged, green when young, turning purplish-brown and becoming black on ripening, surfaces glabrous, often wrinkled in furrows, bearing terminal crown of persistent sepals and stylopodium-alike structure with persistent styles free for almost half the length and conspicuous, white, globose stigmas; seeds white or creamy, lanceoid or oblong-lanceoid, 2.5–3.4 x 1–3 mm, obtuse above, rounded below, slightly flattened, glabrous.

Flowering & Fruiting: September-October.

Habitat: Climbing on shrubs along roadsides.

Abundance: Locally common.

IUCN conservation status: Not evaluated.

Distribution: India: North-west Himalaya: Jammu & Kashmir (Kodara). Neo-Endemic

Etymology: The species is named as a token of respect to my teacher and the Additional Director, Botanical Survey of India, Kolkata, Dr. Devendra K. Singh.

Key to the species of *Aralia* reported in India

(Key as proposed by Wen et al. (*l.c.*), with required modifications to incorporate the new species; distribution clockwise)

1. Leaves ternate-pinnate compound 2
1. Leaves ternate, trifoliate or 1–4-pinnately compound 3
2. Stem green to greenish-purple; leaflets narrowly ovate to less commonly ovate, (4–)8–21 cm long, 3–8.5 cm wide, acute to acuminate at apex, nearly glabrescent to slightly scabrous on adaxial surface, glabrescent to slightly puberulent on abaxial surface ..... *A. cachemirica* [INDIA (Jammu & Kashmir, Himachal Pradesh, Uttarakhand), PAKISTAN, NEPAL].
2. Stem purple to dark purple; leaflets ovate, or occasionally narrowly so to elliptic, 3.5–11.5 cm long, 2.3–5.5 cm wide, sharply acuminate at apex, adaxial surface pilose along veins to rarely glabrescent, abaxial surface pilose, or at least so along the veins and veinlets ..... *A. tibetana* [INDIA (Sikkim), NEPAL, CHINA (Tibet), BHUTAN]
3. Stems unarmed; often epiphytes; leaves pinnately compound with 3–7 leaflets 4
3. Stems prickly; non epiphytes; leaves 2–4-pinnately compound 9
4. Leaflets glaucous beneath, entire at margins, relatively small (2.5–5.5 cm long, 1.5–2.5 cm wide) ..... *A. parasitica* [INDIA (Uttarakhand, Arunachal Pradesh, Assam, Nagaland), CHINA, NEPAL, THAILAND].
4. Leaflets green beneath, toothed at margins, relatively large (7.5–15.5 x 4–9 cm) 5
5. Flowers in racemes; inflorescence whitish green; leaflets bluntly serrate at margins 6
5. Flowers in umbels; inflorescence purplish-green; leaflets serrulate to ciliate at margins 7
6. Leaves with 3–5 leaflets; petiolules of lateral leaflets 1.5–3 cm long; those of lowermost leaflets of the pinnae conspicuously articulated below the lamina; inflorescence glabrous; styles mostly united ..... *A . subcordata* [INDIA (Meghalaya), CHINA].
6. Leaves with 5–7 leaflets; petiolules of lateral leaflets 0–1.3 cm long; those of lowermost leaflet of the pinna slightly articulated; inflorescence more or less pilose; styles mostly free ..... *A. gigantea* [INDIA (West Bengal, Sikkim, Arunachal Pradesh, Assam, Nagaland), NEPAL, CHINA, BHUTAN].
7. Leaves with usually 5 leaflets, sometimes 3–7; inflorescence without a main axis, primary inflorescence branches with terminal umbel and 1–6 umbels clustered umbellately below the terminal umbel ..... *A. leschenaultii* [INDIA (Uttarakhand, West Bengal, Sikkim, Tamil Nadu), NEPAL, BHUTAN, CHINA, BANGLADESH, THAILAND, VIETNAM, SRI LANKA].
7. Leaves 3-foliolate; inflorescence with a main axis, umbels racemosely or corymbosely arranged on primary inflorescence branches 8
8. Herbaceous climber; stems hollow; leaflet apex acute or sub acute, margins serrulate, serrate to biserrate; inflorescence axis and pedicels

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moderately pilose; umbels corymbosely arranged on panicle branches; fruits with stylopodium-like crown ….…… *A. devendrae* [INDIA (Jammu & Kashmir)].

8. Shrub, epiphytic or climbing; stems solid; leaflet apex acuminate, margins sharply ciliate; inflorescence axis and pedicels glabrous; umbels racemosely arranged on panicle branches; fruits without stylopodium-like crown ……..... *A. kingdon-wardii* [INDIA (West Bengal, Sikkim, Arunachal Pradesh, Assam), CHINA, BHUTAN, MYANMAR].
9. Leaflets glabrous ……..……..… 10
9. Leaflets more or less pubescent ……..……..… 11
10. Leaves 3–4-pinnately compound; leaflet serrulate at margins, with more or less rounded teeth; fruits small, 3–3.5 mm in diameter ……. *A. foliolosa* [INDIA (West Bengal, Sikkim, Arunachal Pradesh, Assam, Meghalaya, Mizoram), CHINA, MYANMAR, BANGLADESH, THAILAND, VIETNAM] .
10. Leaves 2- or rarely 3-pinnately compound; leaflets biserrate and ciliate at margins; fruits large, 6–6.5 mm long, 5–5.5 mm wide ..…… ……... *A. malabarica* [INDIA (Kerala, Tamil Nadu)].
11. Leaflets obovate to elliptic, pubescent with appressed hairs; bracts and bracteoles persistent; fruits small, 3.5–5 mm in diameter..... ……..... *A. thomsonii* [INDIA (Arunachal Pradesh, Assam, Meghalaya), CHINA, MYANMAR, MALAYSIA, THAILAND, VIETNAM].
11. Leaflets lanceolate to narrowly ovate, glabrescent to pilose; bracts and bracteoles caduceus; fruits large, 5–6 mm in diameter ……... …….. *A. armata* [INDIA (Orissa, West Bengal, Sikkim, Meghalaya, Nagaland), CHINA, MYANMAR, THAILAND].

Note: *Aralia devendrae* differs from *A. cachemirica*, (regional allied species), in later presenting erect, perennial herbs, leaves ternate-pinnate with 11–17 leaflets (5-7-leafleted on terminal branch and 3–5-leafleted on lateral branches), ovate-lanceolate or narrowly ovate leaflets, leaflet apex usually acuminate (at least in terminal leaflets, sometimes acute in lateral leaflets), leaf petiole much shorter than leaf rachis (leaf rachis here treated including petiolule of terminal leaflet), inflorescence a panicle of axillary, solitary and terminal sub umbellately whorled, peduncled umbels or axillary, once or twice branched, peduncled, paniculate umbels with secondary branches much shorter and arising much later than terminal umbel (not corymbose), primary panicle branches often verticillately arranged on inflorescence axis and usually terminated in solitary umbel or branched peduncle bearing 3, rarely 4–5 umbels with lateral umbels much shorter and arranged racemosely (not corymbose), panicle axis erect, stiff and pedicels densely pilose.

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喜馬拉亞西北部印度查漠及喀什米爾地區之刺楸屬新種

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摘要：本文繪圖並描述報導一產自喜馬拉亞西北部印度查漠及喀什米爾地區之刺楸屬新種笛氏刺楸 (*Aralia devendrae*)，本種明顯可以草質藤本的生活型,中空具稜的莖;鋸齒狀或重鋸齒狀葉緣, 銳尖或亞銳尖的先端, 葉脈光滑或具有細毛的小葉; 繖形花序在圓錐分枝上以繖房花狀排列；果實具有花柱下盤狀的冠及花柱至少一半長度的離生等等特徵容易與親緣種金敦氏刺楸 (*A. kingdon-wardii* J. Wen, Lowry & Esser) 區隔。

關鍵詞：笛氏刺楸、刺楸屬、五加科、喜馬拉亞西北部、喀什米爾、印度。

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