



Original Research Article

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## *Jasminum pentaneurum* Hand.-Mazz. (Oleaceae): An Addition to Indian Flora from Arunachal Pradesh, North East India

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### Abstract

*Jasminum pentaneurum* Hand.-Mazz. (Oleaceae) is reported for the first time in India from Arunachal Pradesh. This species differs from other Indian *Jasminum* spp. by bearing conspicuous leafy bracts at the base of the inflorescence. Detailed description along with notes on its habitat and ecology and photographs are provided for easy identification. Additionally, a comparison of the diagnostic characters between this species and other Indian species are made and also provided its conservations status.

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### Keywords

Arunachal Pradesh  
*Jasminum pentaneurum*  
New record to India

### Introduction

Jasmines are the one among the most interesting group of flowering plants widely cultivated for their attractive and fragrant flowers. They are grown in gardens as decorative shrubs in landscaping, for making garlands, hair decoration and for extraction of essential oil which is a highly lucrative business of late for scent-making and perfuming tea (Mabberley, 2008).

The genus *Jasminum* L. is an old world genus comprising about 200 species, especially in the tropics but with a few in warm temperate regions. The genus is distributed from the Mediterranean region, Africa, Europe, Asia, Australia and the South Pacific Islands (Kobuski, 1932; Green, 1995, 2000 and 2003; Chang

et al., 1996). Clarke (1882) enumerated a total of 53 taxa belonging to 43 species for the flora of British India.

A total of 53 taxa were reported from the Indian Subcontinent (Green, 2003), of which 17 species are reported as rare and threatened (Srivastava and Kapoor, 1987). A total of 12 taxa are endemic to India (Srivastava, 1987; Singh et al., 2015).

In Arunachal Pradesh, so far 16 species are known to occur viz. *J. adenophyllum*, *J. attenuatum*, *J. caudatum*, *J. coarctatum*, *J. dispernum* subsp. *forrestianum*, *J. elongatum*, *J. flexile*, *J. grandiflorum*, *J. humile*, *J. lanceolaria*, *J. laurifolium* var. *laurifolium*, *J. listeri*, *J. multiflorum*, *J. nepalense*, *J. nervosum* and *J. sambac* (Green, 2003; Chowdhery et al., 2008).

## Materials and methods

During a recent plant exploration tour to Yaapgo area in Pasighat a species of *Jasminum* was collected. On critical study of relevant literature (Clarke, 1882; Green, 2003; Chauhan et al., 1996; Chowdhery et al., 2008; Deb, 1983; Haridasan and Rao, 1987; Kanjilal et al., 1939; Chang et al., 1996; Bora and Kumar, 2003; Ambrish, 2013) and consultation of herbarium depositions at ARUN, ASSAM, BSHC and CAL the specimen was identified as *Jasminum pentaneurum* Hand.-Mazz., a species so far not reported from Arunachal Pradesh as well as for the flora of India. Therefore the present collection forms a new distributional record for the flora of India. Brief description and notes on its geographical distribution, habitat and ecology along with photographs are provided for easy identification.

A dichotomous key to the *Jasminum* spp. occurring in Arunachal Pradesh is also provided. The voucher specimens are deposited at CAL and at North Eastern Institute of Folk Medicine, Pasighat, Arunachal Pradesh, for future reference.

## Results and discussion

### Taxonomic treatment

*Jasminum pentaneurum* Hand.-Mazz. in Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 59: 110. 1922; Kobuski in J. Arnold Arbor. 13: 167. 1932; Chang et al., Fl. China 15: 316. 1996.

Scandent shrubs, 2-3 m; branchlets terete, glabrous. Leaves simple, opposite; petiole ca. 8 mm, articulate at base, canaliculate, twisted; leaves ovate-lanceolate, 3-7 × 2-6.5 cm, rounded to cuneate or sub truncate at base, entire to faintly undulate at margins, long acuminate at apex, prominently 3-veined at base, apex acuminate leathery, glabrous, dark green above, pale beneath. Inflorescence in 2-3 flowered cymes, terminal or axillary; bracts green, leafy, 1-3 × 0.5 cm. Flowers white, fragrant; pedicel 1-mm, pubescent. Calyx lobes ca. 6-8, pale green, linear, 1-2 cm long, glabrous. Corolla white, tube 2-2.2 cm; lobes 6-8, lanceolate, 10-25 × 3.5 mm, glabrous. Stamens 2, included, inserted at middle of corolla tube; filaments short; anthers yellow, ca. 5 × 1 mm, dorsifixed, introrse. Style 5-7 mm, filiform; stigma 2-lobed. Berries green turning black on ripening, reniform, 1-1.5 cm × 6-8 mm, glabrous (Fig. 1).



**Fig. 1:** *Jasminum pentaneurum*: A. Twig with Inflorescence; B. Flower bud with leafy bracts; C. Flower with leafy bracts; D. Stamens; E. Gynoecium with style; F. Fruit.

**Flowering and Fruiting:** February–June

**Distribution:** India (Arunachal Pradesh); China (Guangdong, Guangxi, Hainan) and Vietnam.

**Habitat and ecology:** This species is occasionally found in evergreen forests along the stream sides on rocky slopes, at 183–220 m elevations. Its local distribution is fragmented and the population is represented by many scattered individuals. Only 07 individuals were located in the evergreen forest slopes and edges of streamlets at Yaapgo village (north-west of Pasighat town) and 10 individuals (3 matured and 7 seedlings) were located from forest plantation area near Sibo Korong River Bridge (north of Pasighat town). The commonly associated species in the habitat include *Brucea mollis*

Wall. ex Kurz, *Cyathula prostrata* (L.) Blume, *Crateva magna* (Lour.) DC., *Dioscorea bulbifera* L., *Elatostema sessile* J.R.Forst. & G.Forst., *Eleutherococcus trifolius* (L.) S.Y. Hu, *Elsholtzia blanda* (Benth.) Benth., *Erythralium scandens* Blume, *Leptopus clarkei* (Hook.f.) Pojark., *Oxyspora paniculata* var. *paniculata* (D.Don.) DC., *Persicaria chinensis* (L.) H. Gross., *Piper sylvaticum* Roxb., *Rauwolfia verticillata* (Lour.) Baill., *Solanum spirale* Roxb., and *Tabernaemontana divaricata* (L.) R.Br. ex Roem. & Schult.

**Specimen examined:** INDIA: Arunachal Pradesh: East Siang Dist.: Pasighat: Yaapgo village; 220 m MSL; 28° 03' 36.0936" N longitude & 95° 17' 48.8508" E latitude; K. Jeyaprakash NEIFM-00445; dated 28-2-2016 (Fig. 2).



**Fig. 2:** Herbarium specimen of *Jasminum pentaneurum* (NEIFM-00445).

**Key to the species of *Jasminum* in Arunachal Pradesh**

- 1a. Leaves all simple, unifoliolate (Section Unifoliolata).....2
- 1b. Leaves all, or at least a few compound, pinnate or trifoliolate .....12
- 2a. Leaves with primary veins pinnately arranged, without prominent basal veins...3
- 2b. Leaves prominently 3 or 5-veined at base.....10
- 3a. Inflorescences open, lax, 1 – 5-flowered.....4
- 3b. Inflorescences dense, many flowered.....8
- 4a. Corolla lobes almost equalling the tube.....5
- 4b. Corolla lobes much shorter than the tube.....6
- 5a. Leaves lanceolate, acuminate; cymes axillary.....*J. listeri*
- 5b. Leaves ovate to broadly elliptic, acute; cymes terminal.....*J. sambac*
- 6a. Calyx lobes long, filiform, 5 – 14 mm long; berries spheroidal.....*J. adenophyllum*
- 6b. Calyx lobes short, teeth like, 0.25 – 1 mm; berries ellipsoid.....7
- 7a. Petioles 10 – 20 mm long; cymes 3- many flowered.....*J. attenuatum*
- 7b. Petioles up to 5 mm long; cymes 1 or rarely 3-flowered.....*J. nepalense*
- 8a. Leaves with 4 – 7 pairs of lateral veins; bracts white or cream; inflorescence terminal, on a distinct peduncle.....*J. coarctatum*
- 8b. Leaves with 2 – 4 pairs of lateral veins; bracts green, leafy; inflorescence axillary or terminal on axillary side-shoots.....9
- 9a. Leaves velutinous to densely pilose beneath; corolla tube 12-17 mm long...*J. multiflorum*
- 9b. Leaves appressed pilose to glabrous beneath; corolla tube 15-25 mm long...*J. elongatum*
- 10a. Basal bracts leaf-like, 1 – 3 cm long; pedicels pubescent.....*J. pentaneurum*
- 10b. Basal bracts not leaf-like, 1 – 1.3 cm long; pedicels glabrous.....11
- 11a. Leaves over 5 times as long as broad; inflorescence 3-5 flowered.....*J. laurifolium* var. *laurifolium*
- 11b. Leaves less than 3 times as long as broad; inflorescence 1 – rarely 3 – flowered.....*J. nervosum*
- 12a. Leaves alternate (Section Alternifolia).....*J. humile*
- 12b. Leaves opposite.....13
- 13a. Leaves pinnate (Section Jasminum).....*J. grandiflorum*
- 13b. Leaves trifoliolate (Section Trifoliolata).....14
- 14a. Leaves coriaceous; petioles stout.....*J. lanceolaria*
- 14b. Leaves chartaceous; petioles slender.....15
- 15a. Inflorescence sub umbellate; corolla tube up to 12 mm long.....*J. dispernum* subsp. *forrestianum*
- 15b. Inflorescence cymose – paniculate; corolla tube 20-30 mm long.....16
- 16a. Petiole 1-2 cm long; leaflets acute to shortly acuminate, domatia absent.....*J. flexile*
- 16b. Petiole 3-4 cm long; leaflets caudate acuminate at apex; domatia distinct, 3-6, tufted.....*J. caudatum*

**Flowering and fruiting:** February–June

**Distribution:** India (Arunachal Pradesh); China (Guangdong, Guangxi, Hainan) and Vietnam.

**Conservation status:** *Jasminum pentaneurum* has been found in growing with stone mixed soil in disturbed as well as undisturbed areas in the forest area of Yaapgo village, on the slopes along stream sides of Sibo Korong river area and NEIFM campus

of Pasighat, Arunachal Pradesh where individuals of many populations grow well. Thus, the species is probably not at risk.

**Conclusion**

The present investigation assumed to provide the baseline information on the genus that can be useful for further research on conservations and field surveys to improve data about the Indian *Jasminum* species.

## Conflict of interest statement

Authors declare that they have no conflict of interest.

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