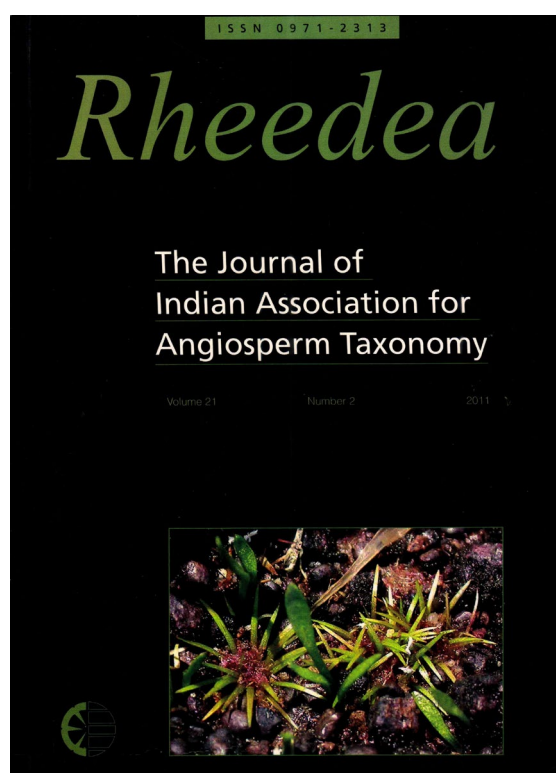




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A new variety of *Crotalaria assamica* (Fabaceae – Papilionoideae), from the Western Ghats, India

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Abstract

A new variety, viz., *Crotalaria assamica* Benth. var. *keralensis* is described and illustrated. The taxon differs from var. *assamica* and var. *philippinensis* Adema in having glabrous, lenticellate or warty stem, and reticulately veined, glabrous calyx tube and lobes.

Keywords: *Crotalaria assamica* var. *keralensis*, Fabaceae, India, Western Ghats

Introduction

The genus *Crotalaria* L. (Fabaceae: Papilionoideae) is centered mainly in tropical and subtropical regions of the world with *c.* 700 species (Mabberley, 2008). It is the largest legume genus in India having 93 species, 1 subspecies, 17 varieties and 2 formae (Ansari, 2008). In Kerala, the genus is so far represented by 56 species, 4 varieties and 1 subspecies (Nayar *et al.*, 2006; Sibichen & Nampy, 2007; Jabbar *et al.*, 2010). While revising the legume flora of Kerala state, the authors have collected specimens of a *Crotalaria* from Nelliampathy, Palakkad district, southern Western Ghats, Kerala. After examining the type specimens [INDIA, Assam, Khasia hills, Hook.f. & Thomson, 914 m, Oct 1/50, Barcode No.: 000591056-K! PHILIPPINES, Luzon, Prov. Abra, Jan. – Feb. 1909, *M. Ramos* BS 7255, Barcode No.: 0479199-L! Fig. 1, 2] and on consultation with Dr. Frits Adema, National Herbarium of the Netherlands, it is confirmed as a third variety of *C. assamica* Benth., besides var. *assamica* and var. *philippinensis* Adema (Adema, 2006). We also noticed a specimen of the same taxon (*V.T. Antony* 2520) collected from Chamakkadu, Thrissur district, Kerala and deposited at RHK. The new variety is described, illustrated, compared (Table 1) and keyed out with other varieties.

***Crotalaria assamica* Benth. var. *keralensis* Krishnaraj, N. Mohanan *et* V.T. Antony, var. nov. Fig. 3**

Crotalaria assamica var. *assamica* *et* var. *philippinensis* similis, sed differt caule glabro lenticellato vel verrucoso, calyces tubo reticulato nervoso glabro *et* lobis glabris.

Typus: INDIA, Kerala, Palakkad district, Nelliampathy, way to Kaikatty forest, ± 900 m, 13 December 2007, *M.V. Krishnaraj* 61927 (Holotypus, TBGT; Isotypus, L)

Undershrubs, *c.* 1 m high; branches terete, *c.* 6 mm thick, glabrous, lenticellate or with white warts, hollow. Leaves simple, oblanceolate, 13.2 – 20.5 × 4.7 – 8 cm, cuneate at base, acute or apiculate at apex, glabrous above, sericeous below; midrib slightly raised above; lateral nerves 14 – 16 pairs; pulvinus terete, *c.* 6 mm long, sericeous; stipules ovate, *c.* 2 mm long, caducous. Racemes axillary and terminal, to 25 cm long; peduncles 3.5 – 4 cm long, glabrous. Bracts ovate, *c.* 5 × 2 mm, ciliate at margins, cuspidate at apex; pedicels *c.* 5 mm long, glabrous; bracteoles 2, acicular, half-way below the pedicel, *c.* 1.25 mm long, glabrous. Calyx 6 – 7 mm long; tube 2 – 3 mm long, thickly reticulate-veined; upper lobes ovate-lanceolate, *c.* 3 mm long, glabrous; lobes of lower lip lanceolate, *c.* 4 × 2 mm, glabrous. Corolla golden yellow; standard petal suborbicular, 1 – 1.2 × *c.* 1.1 cm, glabrous; claw *c.* 2 mm long, without callosities; wing petals elliptic, *c.* 1.1 × 0.6 cm long, obtuse at apex; claw *c.* 2 mm long, glabrous with inconspicuous lateral ridges; keel petals boat-shaped with twisted beak, *c.* 1 × 0.6 cm, ciliate at lower margin; claw *c.* 1.25 mm long. Stamens 10; staminal tube oblique, *c.* 6 × 4 mm; filaments 3 – 5 mm long; anthers dimorphic. Ovary sessile or subsessile, oblong, *c.* 6 × 2 mm, glabrous; ovules many; style geniculate, *c.* 8 mm long,



Fig. 1. Lectotype of *Crotalaria assamica* Benth. (Barcode No.: 000591056-K).

pubescent at margins towards apex; stigma capitate, c. 0.25 mm. Pods narrowly ellipsoid, c. 5 × 1 cm, inflated; seeds 15 – 18, reniform, c. 4 × 3 mm.

Flowering & Fruiting: December – January.

Habitat: Margins of semi-evergreen forests at ± 900 m and also in plains at ± 75 m.

Distribution: Nelliampathy (Palakkad district) and Chamakkadu (Thrissur district) in Kerala, southern Western Ghats. Extremely rare.

Etymology: The variety is named after the Kerala state in which it occurs.

Paratype: INDIA, Kerala, Thrissur district, Muniyara, Chamakkadu, ± 75 m, 9.12.1987, V.T. Antony 2520 (RHK).

Note: This taxon differs from the type specimens of *C. assamica* var. *assamica* and var. *philippinensis* very distinctly. It is an extreme state of glabrous form and calyx lobes with conspicuous reticulate venation. The pods are narrowly

ellipsoid but broadly elliptic-oblongoid in var. *assamica* and var. *philippinensis*.

Key to varieties of *Crotalaria assamica* Benth.

1. Stems and branches warty, glabrous; peduncles c. 5 cm long; calyx 6 – 7 mm long, glabrous with conspicuous reticulate venation; pods narrowly ellipsoid var. **keralensis**
1. Stems and branches smooth, strigose; peduncles 12 – 30 cm long; calyx 13 – 15 mm long, densely appressed-golden-pubescent or sericeous with faint venation; pods broadly elliptic-oblongoid 2
2. Stipules persistent, c. 4 mm long; bracteoles c. 3 mm long; standard petal 2.2 – 2.4 × 1 – 2 cm; pods 4 – 6 × 1.5 – 2 cm var. **assamica**
2. Stipules caducous, c. 2 mm long; bracteoles 1 – 1.6 mm long; standard petal 1.4 – 2 × 1.1 – 1.8 cm; pods 3.4 – 4 × 1 – 1.8 cm ... var. **philippinensis**



Fig. 2. Holotype of *Crotalaria assamica* Benth. var. *philippinensis* Adema (Barcode No.: 0479199-L.)

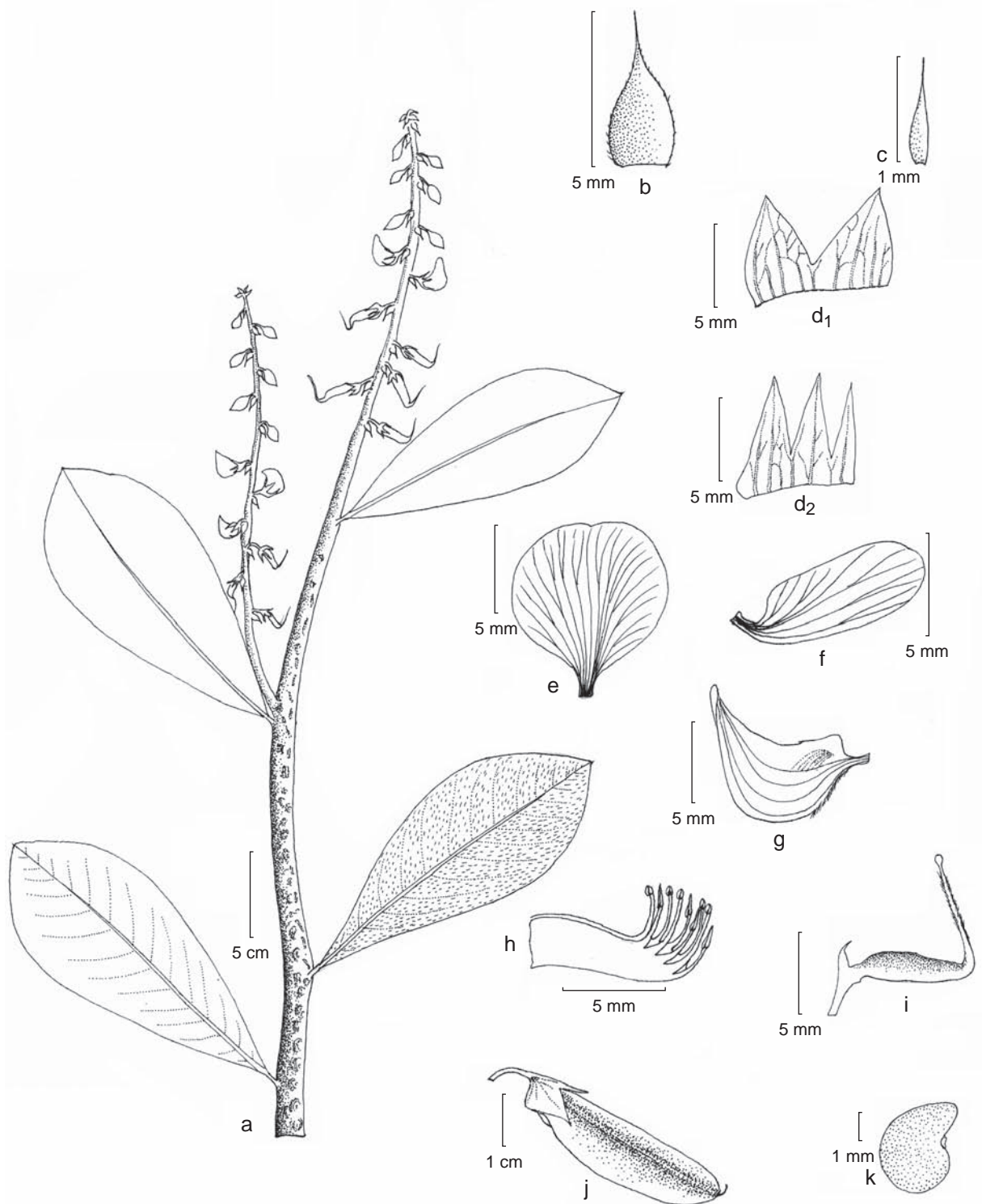


Fig. 3. *Crotalaria assamica* Benth. var. *keralensis* Krishnaraj, N. Mohanan et V.T. Antony, var. nov.: a. Habit; b. Bract; c. Bracteole; d₁. Upper calyx lobes; d₂. Lower calyx lobes; e. Standard petal; f. Wing petal; g. Keel petal; h. Androecium; i. Gynoeceum; j. Pod; k. Seed (Drawn after *M.V. Krishnaraj* 61927 by M.V. Krishnaraj).

Table 1. Comparison between continental Asian varieties and Philippine variety of *Crotalaria assamica* Benth.

Characters	var. <i>assamica</i>	var. <i>keralensis</i> , var. nov.	var. <i>philippinensis</i>
Habit and Height	Shrubs, c. 3 m high	Subshrubs, c. 1 m high	Dwarf shrubs, c. 0.5 m high
Branch	Appressed-pubescent	Glabrous, lenticellate, warty	Strigose
Leaves	Elliptic-oblongate, appressed-pubescent below	Oblanceolate, sericeous below	Narrowly elliptic, sericeous below
Pulvinus	c. 4 mm long	c. 6 mm long	2 – 4 mm long
Stipule	Persistent, c. 4 mm long	Caducous, c. 2 mm long	Caducous, 2 – 3 mm long
Inflorescence	Terminal, 20 – 35 cm long	Terminal and axillary, c. 25 cm long	Terminal, 7.5 – 21 cm long
Bracteoles	c. 3 mm long	c. 1.25 mm long	1 – 1.6 mm long
Calyx	c. 15 mm long, faintly veined, densely appressed golden pubescent	6 – 7 mm long, thickly reticulately veined, glabrous	13 – 15 mm long, faintly veined, sericeous
Standard petal	2.2 – 2.4 × 1 – 2 cm	1 – 1.2 × c. 1.1 cm	1.4 – 2 × 1.1 – 1.8 cm
Wing petals	c. 2.2 × 1 cm	c. 1.1 × 0.6 cm	1.2 – 1.4 × 0.6 – 0.7 cm
Keel petals	c. 2 × 1 cm	c. 1 × 0.6 cm	1.3 – 1.5 × 0.6 – 0.7 cm
Pods	Elliptic-oblongoid, 4 – 6 × 1.5 – 2 cm	Ellipsoid, c. 5 × 1 cm,	Elliptic-oblongoid, 3.4 – 4 × 1 – 1.8 cm

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Literature Cited

- Adema, F. 2006.** Notes on Malesian Fabaceae (Leguminosae - Papilionoideae) 12. The genus *Crotalaria*. *Blumea* **51**: 309 – 332.
- Ansari, A.A. 2008.** *Crotalaria L. in India*. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Jabbar, M.A., Krishnaraj, M.V. & N. Mohanan 2010.** *Crotalaria incana* subsp. *purpurascens* (Fabaceae), A new record for India. *Rheedea* **20**: 131 – 132.
- Mabberley, D.J. 2008.** *Mabberley's Plant-Book: A portable dictionary of plants, their classification and uses*. Third Edition. Cambridge University Press, Cambridge.
- Nayar, T.S., Beegham, R.A., Mohanan, N. & G. Rajkumar 2006.** *Flowering Plants of Kerala – A Handbook*. TBGRI, Thiruvananthapuram.
- Sibichen, M.T. & S. Nampy 2007.** *Crotalaria kurisumalayana* Sibichen & Nampy (Fabaceae), a new species from India. *Candollea* **62**: 105 – 108.

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