



IJPAAES

## A NEW VARIETY OF *SMITHIA* (FABACEAE) FROM THE SOUTHERN WESTERN GHATS, INDIA

Anoop P. Balan<sup>1\*</sup> and S.V. Predeep<sup>2</sup>

<sup>1</sup>Centre for Medicinal Plants Research (CMPR), Arya Vaidya Sala, Kottakkal P.O., Malappuram, Kerala, India - 676503.

<sup>2</sup>Department of Botany, S.V.R.N.S.S. College, T.P.Puram P.O., Vazhoor, Kottayam, Kerala, India - 686505.

\*Corresponding author. E-mail: [anooppb01@gmail.com](mailto:anooppb01@gmail.com)

**ABSTRACT:** *Smithia venkobarrowii* Gamble var. *glabra* A.P. Balan and S.V. Predeep is described here as a new variety from the Southern Western Ghats of India. A detailed description, illustration and distribution map are provided for easy identification.

**Key words.** *Smithia*, Fabaceae, new variety, Western Ghats, India.

### INTRODUCTION

The genus *Smithia* Ait. With c. 30 species is distributed in tropics of the Old World and is represented in India by 18 species [3, 4]. Of the 18 species 11 are endemic to India and the high percentage of endemism shown by this genus indicates the urgency of conservation efforts that are yet to be taken. *Smithia* is a taxonomically difficult genus due to the close resemblance between species and many of them represented in various Indian herbaria's were poorly identified. No study of the genus in India has been made after Baker [1] and Gamble [2]. While exploring the legume flora of Kerala state in connection with the project 'Studies on the legume flora of Kerala state', the authors came across few interesting specimens of *Smithia venkobarrowii*, a species endemic to the southern Western Ghats of India (Kerala). After examining the type specimen (INDIA. Kerala: Idukki District., Peermed, 16.10.1916, *Venkoba Rao* 3799 - K) it is confirmed as a new variety and is described and illustrated with distribution map.

*Smithia venkobarrowii* Gamble var. *glabra* A.P. Balan et S.V. Predeep, var. nov.

Type: INDIA. Kerala: Palakkad District, Nelliampathy, 1200 m, 28 Nov. 2006, S.V. Predeep 20448 (Holotype: MH; Isotypes: CAL).

Erect subshrubs, 80 – 125 cm high; stem glabrous. Stipules peltate, 3 – 5 x 1.5 – 2 mm, ovate, acuminate, scariose, appendage 3 – 4 mm long; stipels 0. Leaves 2 – 3.5 cm long including 0.8 – 1.5 cm long rachis and 0.5 – 0.8 cm long bristly petiole; leaflets 3 – 4 pairs, 1.2 – 2 x 0.4 – 0.6 cm, obovate – oblong, obtuse-rounded at apex, slightly oblique at base, membranous, glabrous above, bristly along margins and outside. Inflorescence 2.5 – 4 cm long subcapitate heads, in pairs or rarely three in the upper leaf axils; peduncles 2 – 3.5 cm long, glabrous or sparsely strigose. Flowers c. 8 mm long, golden yellow; pedicels 2 – 3 mm long, sparsely strigose; bracts 4 x 2 mm, ovate, scariose, minutely ciliate, deciduous; bracteoles 3 x 1 mm, oblanceolate, scariose, sparsely bristly along margins and outside, persistent. Calyx bilipped, membranous with anastomosing veins, bristly along margins and sparsely so outside; upper lip broad, 4 x 4 mm, truncate and retuse at apex; lower lip 4 x 3 mm, obviously 3 – lobed. Corolla exserted: standard 3.5 x 3.5 mm, orbicular, tinged with red, emarginated at apex, claw c. 1.5 mm long; wings 3.5 x 1.5 mm, oblong, auriculate at base, claw c. 1 mm long; keels 3.5 x 1.5 mm, obliquely obovate, auricle c. 1 mm long, claw 1.5 mm long. Stamens 5 + 5: sheath 3 mm long; filaments c. 1 mm long; anthers uniform, 0.3 mm long, ovoid. Ovary sessile, c. 2 mm long, linear, glabrous; 7 – 8 – ovuled; style 3 mm long, slightly up curved, glabrous; stigma pointed. Lomentum joints twisted and folded inside the calyx; joints 6 – 8, 2 x 2 mm, orbicular, reticulate with flat border. Seeds 1.5 x 1.3 mm, subreni form, flat, brownish, exstrophiolate.

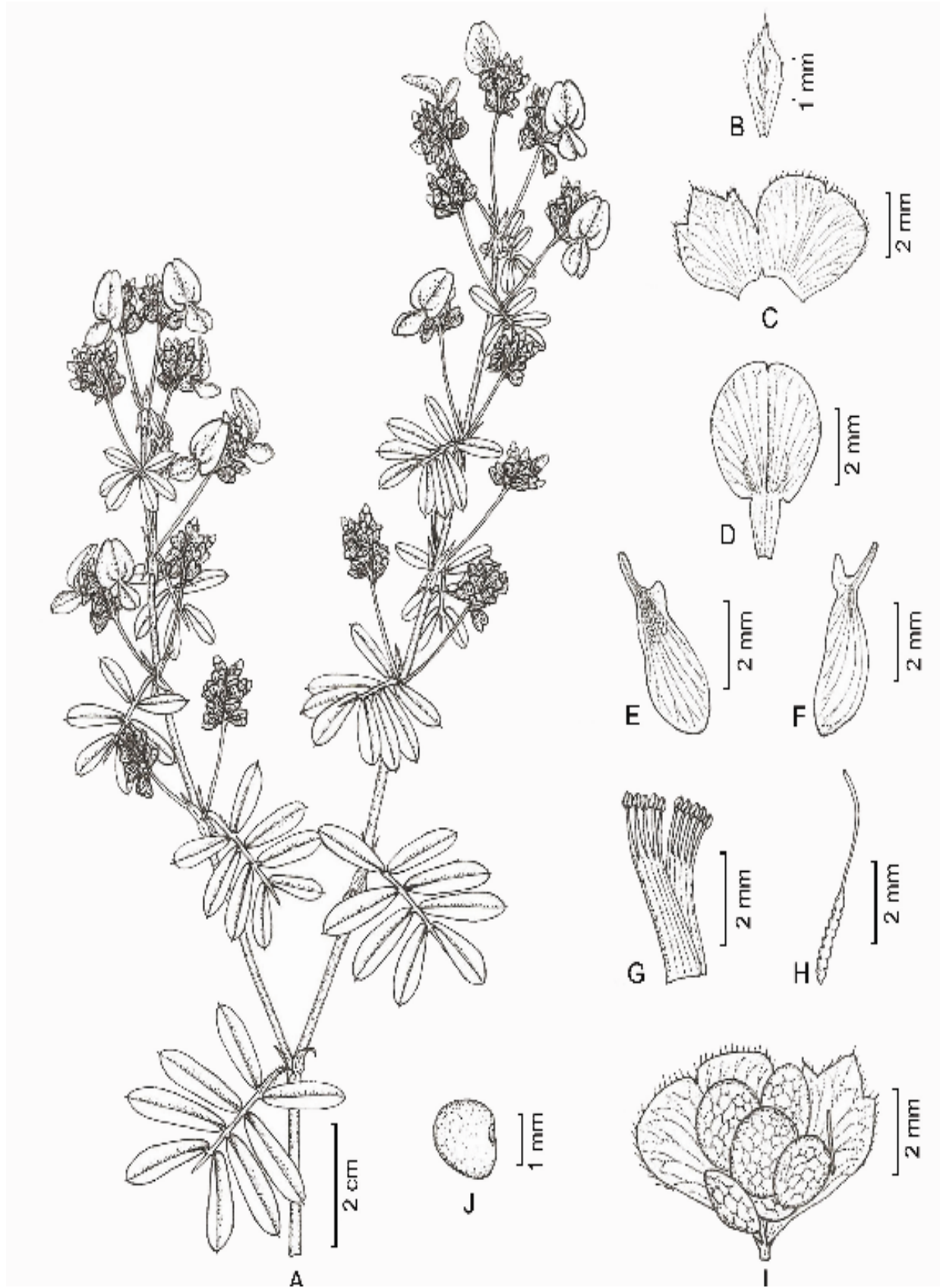


Figure-1: *Smithia venkobarrowii* var. *glabra*. A. Habit, B.Bract, C,Calyx, D.Standard, E.Wing, F.Keel, G.Stamens, H.Pistil, I Lomentum, J.Seed

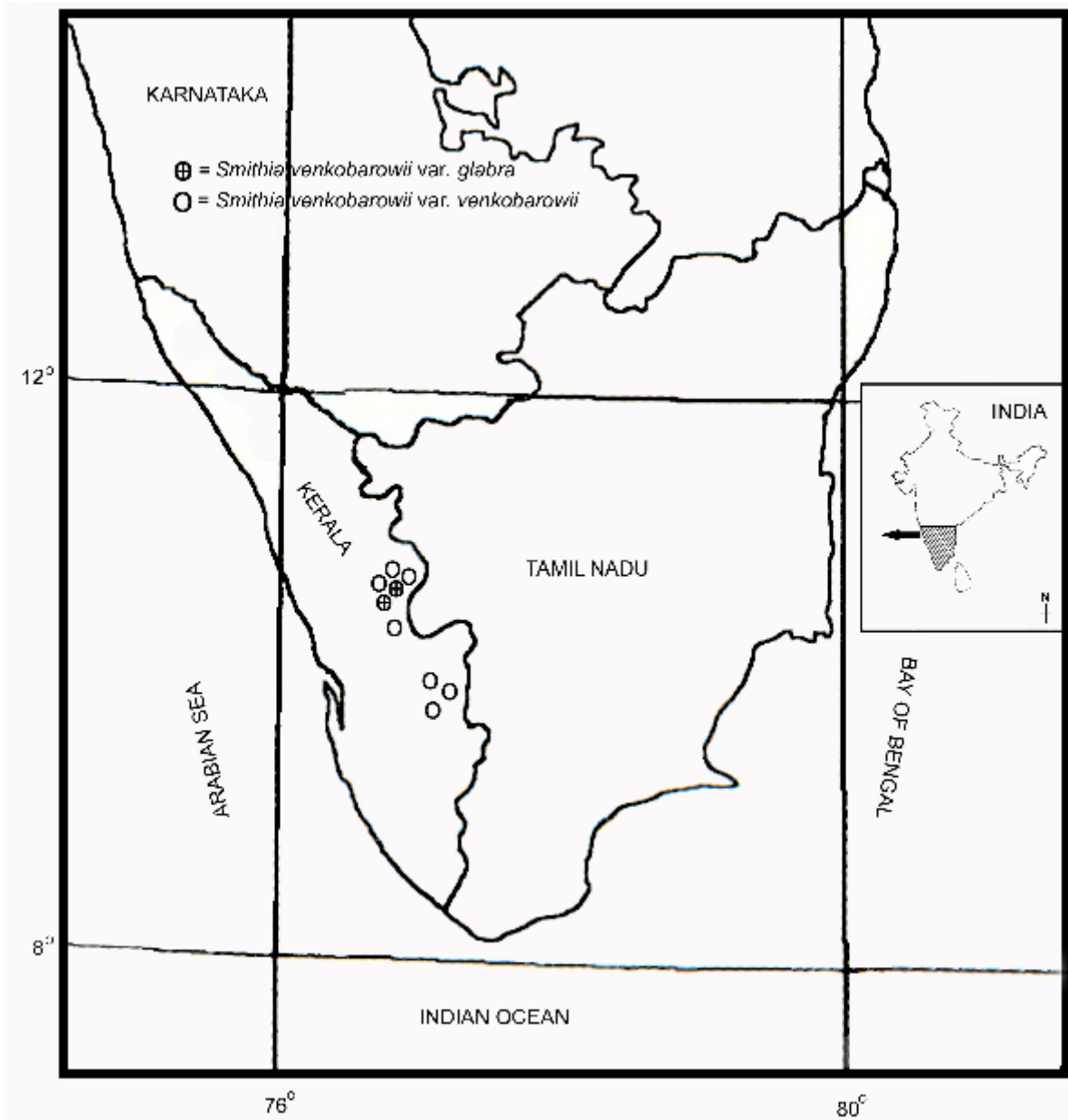


Figure-2: Distribution of *Smithia venkobarowii* var. *glabra* and *s.venkobarowii* var. *venkobarowii*

**Diagnosis**

*Smithia venkobarowii* var. *glabra* var. nov. Differs from *Smithia venkobarowii* by its glabrous stem, smaller, hairy leaflets, smaller flowers and up to 8-jointed lomentum.

**Table 1. Comparison between the 2 varieties of *Smithia venkobarowii***

Characters	var. <i>venkobarowii</i>	var. <i>glabra</i>
Stem	Densely bristly throughout.	Glbrous throughout.
Leaflets	4 – 5 pairs, 1.5 – 3 cm long, glabrous.	3 – 4 pairs, 1 – 2 cm long, bristly along margins and outside.
Flowers	1.3 – 1.5 cm across, 1 cm long.	1 cm across, c. 8 mm long.
Lomentum	Joints 4 – 6.	Joints 6 – 8.

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

**Distribution and Ecology:** So far known from the high altitude grass lands in Nelliampathy hills of Southern Western Ghats (Fig.2). This variety was collected from a single locality near Nelliampathy where we could locate only few plants. As it is a new variety described here, a proper status can only be possible after other areas are explored and more data is collected.

**Etymology:** The varietal name '*glabra*' indicates the glabrous nature of the stem.

**Specimens examined:** INDIA. Kerala: Palakkad district, Nelliampathy hills, 1150 m, 28 Nov. 2006, S.V. Predeep 20411 & 20448 (MH, CAL).

**Notes:** Gamble [2] described the species *Smithia venkobarrowii* based on a collection of K. Venkoba Rao from the Peermadu Ghats of Kerala state (Venkoba Rao 3799, K, University College, Trivandrum). He described the species as a suberect or prostrate herb or even as a trailing herb. However, we could locate good populations of the species in and around the type locality which were tall, robust sub shrubs reaching 90 - 125 cm height.

### ACKNOWLEDGEMENTS

The authors are thankful to the Kerala State Council for Science, Technology and Environment, Thiruvananthapuram for financial assistance and to the Principal, S.V.R.N.S.S. College, Vazhoor for facilities provided. We are also grateful to the curators of K and University College, Trivandrum for allowing consultation. First author is thankful to the authorities of Centre for Medicinal Plants Research (CMPR), AVS, Kottakkal for the support given.

### REFERENCES

- [1] Baker, J.G. 1876. *Smithia*. In Hooker J.D. (Ed.). The Flora of British India, Vol.2. L. Reeve & Co., London, pp.148-151
- [2] Gamble, J. S. 1918. Flora of the Presidency of Madras, Vol.1. Adlard & Son Ltd., London, pp.327-330.
- [3] Polhill, R. M. & Raven, P. H. 1981. Advances in Legume Systematics, Vol.1. Royal Botanic Garden, Kew, U.K.
- [4] Sanjappa, M. 1991. Legumes of India. Botanical Survey of India, Calcutta, pp. 246 – 248.