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Cover: Green Bee-eater with colour pencils and watercolor wash by Elakshi Mahika Molur.



An extended distribution and rediscovery of *Rhynchosia suaveolens* (L.f.) DC. (Fabaceae) for Maharashtra, India

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Abstract: *Rhynchosia suaveolens* (L.f.) DC. was reported for the first time from the Vidarbha region of Maharashtra. It is rediscovered after 144 years from Maharashtra. Previously, this species was recorded only from the southern part of India. In the present article detailed description, illustration, digital photographs, and relevant notes are provided to facilitate its easy identification.

Keywords: Phaseoleae, sacred grove, variety, Vidarbha, Yavatmal.

The genus *Rhynchosia* Lour. belongs to the subtribe Cajaninae, tribe Phaseoleae, in the family Fabaceae. The genus is the largest in the subtribe, comprising about 232 species, distributed throughout the tropics and subtropics and extending to North America from Mexico to some parts of the United States as well as Africa and

Madagascar where it is most diverse (Schrire 2005). From the Indian subcontinent Baker (1879) reported 22 species of *Rhynchosia*. Presently, in India the genus is represented by 28 species, one variety and one subspecies (Sanjappa 2020) of which seven species are endemic to India and around 60%, are found in Eastern Ghats (Gamble 1928; Pullaiah & Ramamurty 2000). Recently, one new species has been described from India, *Rhynchosia ravii* K.Prasad & A.Naray (Prasad & Swamy 2014). Additionally, a replaced name for *Rhynchosia fischeri* P. Satyanar. & Thoth., i.e., *Rhynchosia ganesanii* Kottaim. & Vasud. has been provided (Kottaimuthu & Vasudevan 2015)

During the field survey in the Yavatmal District of

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Maharashtra, the authors collected one interesting specimen of *Rhynchosia*. Upon critical studies, scrutiny of authentic literature (Baker 1879; Haines 1916; Gamble 1928; Rao & Razi 1981; Matthew 1981; Vajravelu 1983; Satyanarayana 1993) and study of the herbarium material from Indian as well as foreign herbaria (BLAT, BSI, BM, CAL, BSD, DD, K, LWG, MH, NL, P, UMPU) the identity of the species was confirmed as *Rhynchosia suaveolens* (L.f.) DC. In India the species have previously been reported from Andhra Pradesh, Tamil Nadu, Karnataka, and Kerala. As per (Satyanarayana 1993) the species was previously reported from Maharashtra in the year 1854 and 1878. However, through the visits to the relevant herbaria (CAL, DD) and literature survey (Kamble & Pradhan 1988; Karthikeyan & Kumar 1993; Almeida 1998; Diwakar & Sharma 2000; Singh & Karthikeyan 2000; Bhogaonkar & Dhole 2019) our attempts to locate the specimen studied by Satyanarayana (1993) were unsuccessful. A solitary specimen from CAL with information on place of collection (Bombay) and the

collector (Kurz.) belonging to this species was located. In the recent checklist of Fabaceae (Sanjappa 2020), the distribution of this species from Maharashtra is not mentioned. All these point out to doubtful distribution of this species from Maharashtra State. Therefore, our collection of *Rhynchosia suaveolens* (L.f.) DC. from Kesurli sacred grove from Yavatmal District establishes its extended distribution to Vidarbha region of Maharashtra. Moreover, this record becomes the rediscovery of the species from Maharashtra state after a gap of 144 years. A detailed description along with field images, locality map (Figure 1), and notes on taxonomy are provided herewith to facilitate its easy identification.

MATERIAL AND METHODS

Flowering specimens of the species were collected from Kesurli sacred grove of Yavatmal District (20.0158N & 79.0047E), Maharashtra in November 2019 (Figure 1). The specimens were then processed and mounted on herbarium sheets following the methods of Jain & Rao

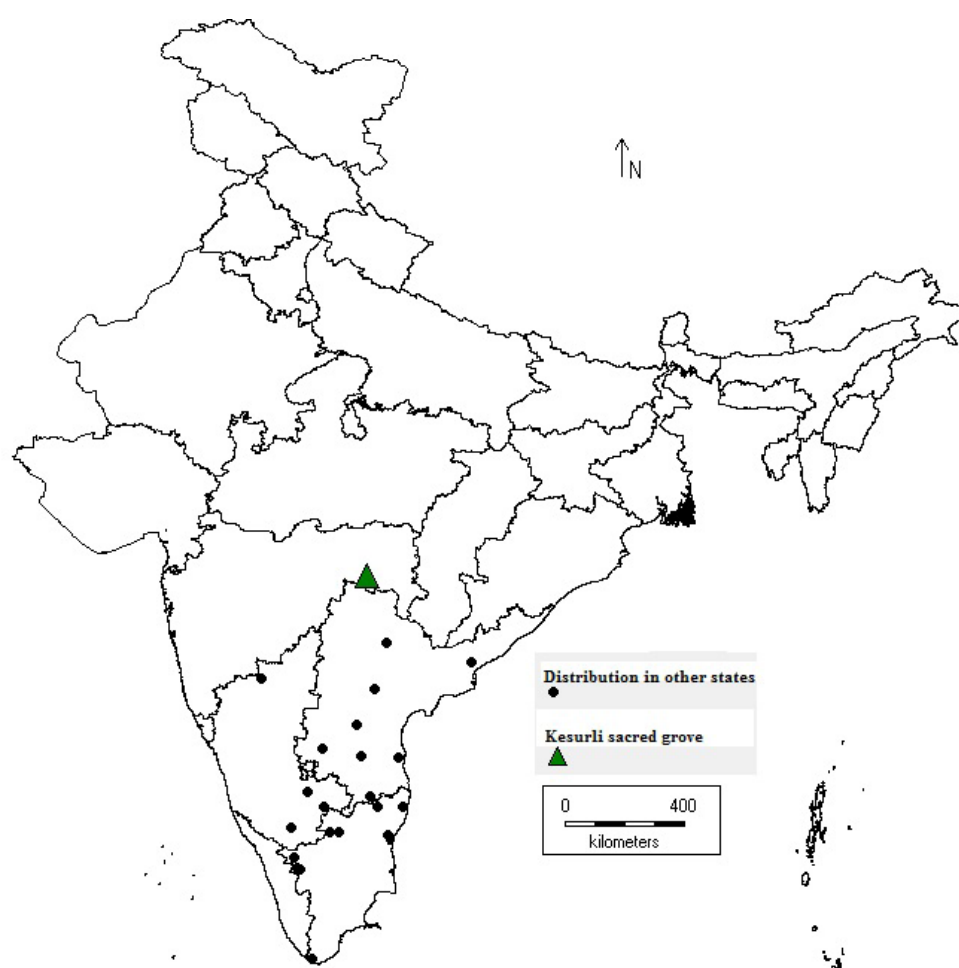


Figure 1. Distribution of *Rhynchosia suaveolens* (L.f.) DC. in India.

(1977). The floral parts were dissected and observed under the stereo zoom microscope (Leica S8APO) for detailed macro and micro-morphology. The digital field photographs were taken by using Canon EOS80D camera. The co-ordinates of locations were recorded using a global positioning system device (Garmin Montana 680). The distribution map is prepared using recorded geo-coordinates, verified using DIVA GIS Ver. 7.5 (Hijmans 2021).

TAXONOMIC TREATMENTS

***Rhynchosia suaveolens* (L.f.) DC.** Prodr. 2:387. 1825 (Figure 2, Image 1,2)

≡ *Glycine suaveolens* L.f. Pl. 326. 1781; Spreng. Syst. 3:196 (1826).

Type: India, Tamil Nadu, Madras, Koenig J.G. s.n. (LINN barcode 901.18); isoelectotype (C barcode C10012343) (Designated by Mishra et al. 2021)

Terrestrial, shrub. Stem twining, cylindrical, green/yellowish-green, older branches woody, young one golden yellow with black spot, pubescent with eglandular and as well as glandular hairs (gland at base). Leaves pinnately trifoliolate, alternate, 4–10 cm long; stipules free lateral 3–8 × 1–1.3 mm, lanceolate finely pubescent; petioles round, 4–7 cm long, pubescent with eglandular and glandular hairs; stipels small, pyramidal; petiolules ca. 15 mm long; leaflet not dimorphic, 5–8 × 2.5–5 cm, ovate-elliptic, acuminate at apex, rounded at base, margin entire, terminal leaflet distinctly petioluled, 2/3 leaflet asymmetrical, 1/3 symmetrical. Inflorescence solitary, axillary, usually longer than petiole, pubescent; peduncles slender 2–4 cm long, finely brownish pubescent; bracts 0.8–1.3 cm long; bracteoles 3.4–4.7 × 0.7–1.7 mm; pedicels 1.2–1.5 mm long. Flower zygomorphic. Calyx 10.2 mm long, teeth 5 unequal, campanulate tube 3–4 mm long, teeth 2.45–4.25 mm long. Corolla yellow, longer than calyx, petals unequal; standard 9.37–9.40 × 7.4 mm long, orbicular with 1.5 mm long claw; wings yellow oblong-obovate, 8.5 × 2.28 mm, round at apex, claw ca. 2 mm long; keel yellow, 8.25 × 2.74 mm, boat shaped; Stamens 10, diadelphous, 9+1, unequal; bundle 7.8 × 1.1 mm; individual filament ca. 6.5 mm long; anthers yellow, oblong, ca. 1 × 0.6 mm. Ovary sessile oblong-elliptic ca. 2.1 × 0.9 mm, with white hairs; style 5–7 mm long, glabrous; stigma capitate. Pod compressed, longer than calyx, septa between seed, oblong 1.5–2 × 0.8–1 cm. Seed 2, arillate, ca. 4.14 × 3 mm.

Flowering: November–December; Fruiting: November–February (–March).

Note: *Rhynchosia suaveolens* is characterized by its

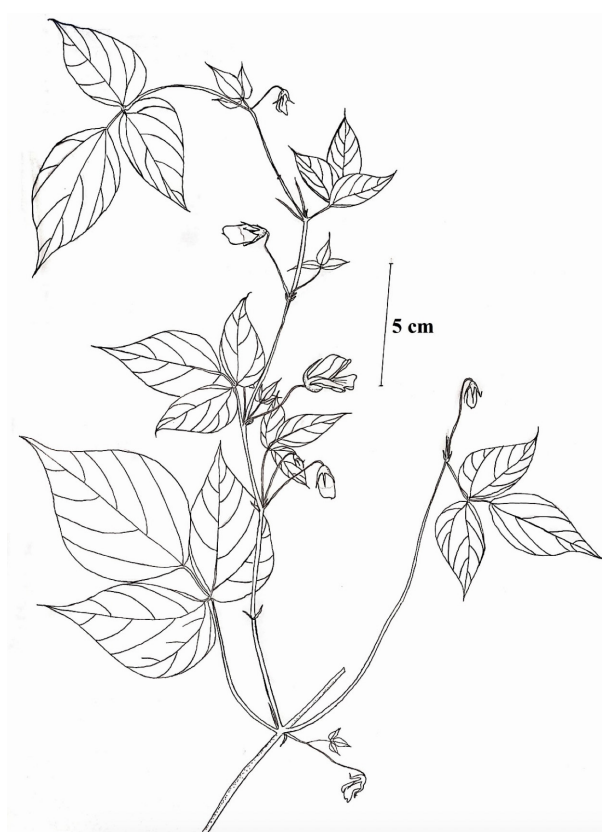


Figure 2. A flowering twig of *Rhynchosia suaveolens* (L.f.) DC.

axillary, solitary, rarely paired flowers and monomorphic leaflets. *R. suaveolens* shows some similarity with *R. ganesanii* and *R. hainesiana* in having a solitary flower but differs in having dimorphic leaflets from *R. ganesanii*, while raceme inflorescence and pod length with *R. hainesiana* (pod 1 cm and raceme 1 cm) vs. (pod 1.5–2 cm and raceme more than 1 cm) in *R. suaveolens*.

Distribution and Habitat: This species has been reported to be distributed only in the southern part of India, i.e., Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu (Figure 1) and Sri Lanka (Manjunatha et al. 2004). It grows in rocky areas, especially near boulders. We have collected this species twining on *Gymnosporia emarginata* (Willd.) Thwaites. The other associated species are *Dodonaea viscosa* Jacq., *Biancaea decapitala* (Roth) O. Deg., *Azadirachta indica* A. Juss., *Butea monosperma* (Lam.) Kuntze, *Senna tora* (L.) Roxb., *Evolvulus nummularius* (L.) L., *Ichnocarpus frutescens* (L.) W.T. Aiton, and *Ehretia microphylla* Lam.

Specimens examined: Asia, India, Andhra Pradesh; Chittoor R.F., 6.iii.1956, S.K. Wagh 5425 & 5426 (BLAT); Cuddapah district, Guvvalacheruvu, 1500 ft., Feb. 1883, J.S. Gamble 10818 (CAL); Chelama, 8.xi.1955, G.H. Madhura (CAL); Nellore district, Sangam, 23.vii.1914,

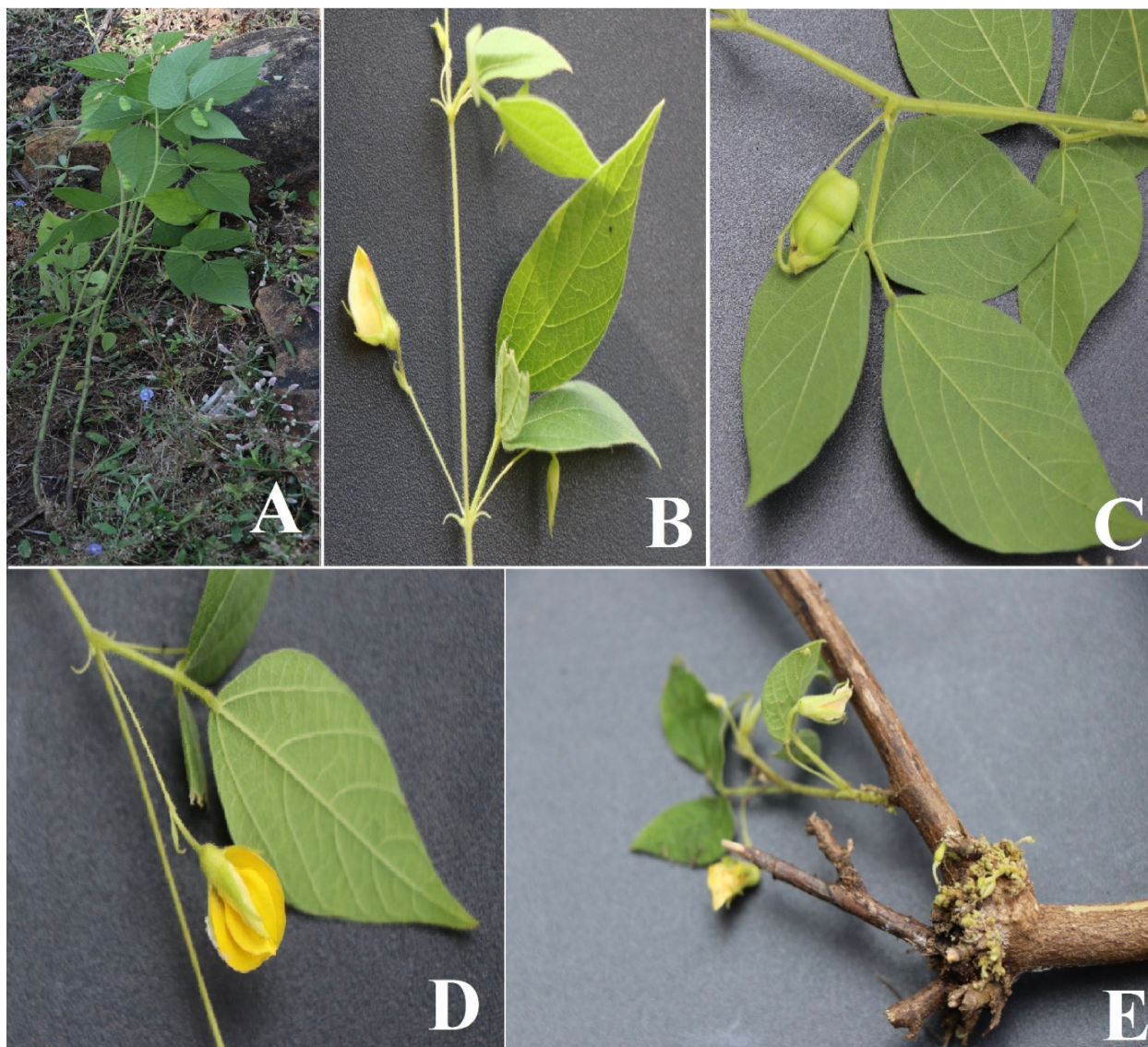


Image 1. *Rhynchosia suaveolens* (L.f.) DC: A—Habit | B—Twig with floral bud | C—Twig with a pod | D—Twig with an open flower | E—Stem.
© Vijay Wagh.

M.S. Ramaswami 1152 (CAL); Nalgonda district, Nagarjunasagar, 100 m, 14.xii.1959, K.M. Sebastine 9775 (CAL, MH); Nagarjunakonda valley, 600–900 ft., 26.xi.1961, K.J. Thothathri 9760 (CAL); Karnataka: Mysore district, Dubare, 6.ix.1961, R.S. Rao 73653 (BSI); Mamadachilume Forest R.H., 30.viii.1961, R.S. Rao 73458 (BSD); Bijapur district, Badaarai, 17.x.1892, Talbot 2792 (BSI); Kerala: Tiruvakkaltheri R.F., 3.xii.1961, K.M. Subrahmanvam 77405 (BSI); Travancore district, Courtallum, M. Rama Rao 1888 (CAL); Maharashtra: Bombay, Kurz s.n. (CAL); Yavatmal district, Wani tehsil, Kesurli sacred grove, 20.0158N & 79.0047E, 212 m, 14.xi.2019, V. Gupta, A.K. Mishra & V.V. Wagh 331973 (LWG); Tamil Nadu: Coimbatore district, Aliar submergible area, 350 m, 24.xi.1962, K.M. Sebastine

15343 (CAL); Gundal valley, 3000 ft., 12.xii.1905, C.E.C. Fischer 604 (CAL).

Specimens image viewed: India, Madras, Wight 5579 (K001121339, K001121340), Madras, 1918, Wight & Gamble J.S. 5579 (K000900364), Kambakam, 1938, E. Barnes 218 (NL2044891), Coromandel, Willam Roxburgh, 26 (BM012564191), Dharmapuri district, Renkanikotta taluk, Manjakkondapalli, Sokkabetta hill, 750 m, 18.xii.1978, K.M. Matthew & N. Venugopal 20448 (CAL); Madras, 1854, Wallich 5579B (K) (K000900362, K000900363, K000900364); Dharmapuri Dist, Harur, Chitteri hills, Alangalmalai slopes, 950 m a.s.l, 12.i.1979, N. Venugopal 20826 (NL2044892), Tambram, E. Barnes s.n. (DD); Kurnooll, Srisailam project site, 16.083333 E, 78.866667 N, 28.ix.1978, L.J.G van der Maesen, 3281

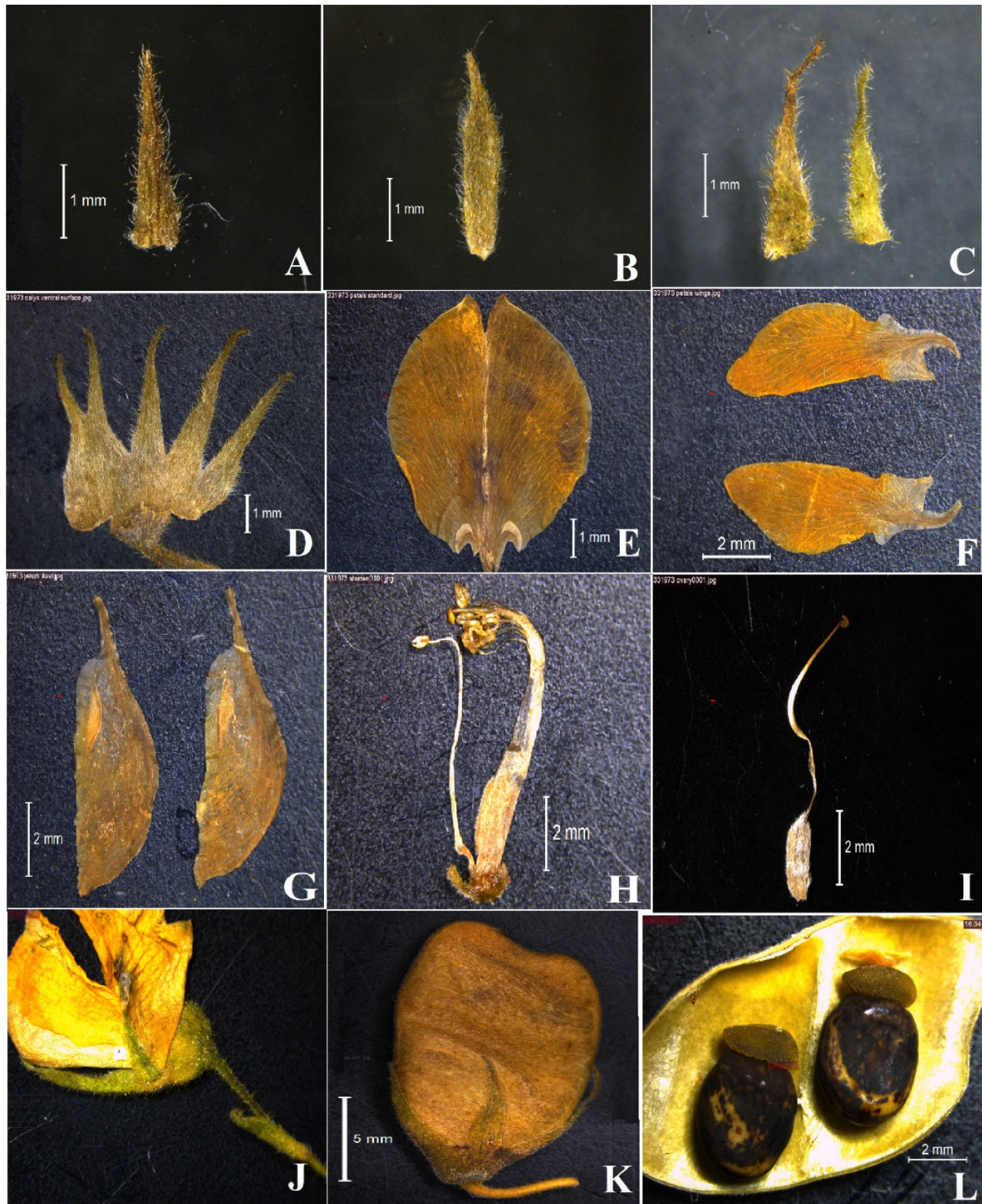


Image 2. *Rhynchosia suaveolens* (L.f.) DC: A—Bract | B—Bracteole | C—Stipule | D—Calyx | E—Standard petal | F—Wing petals | G—Keel petals | H—Androecium | I—Gynoecium | J—Flower | K—Pod | L—Pods opened to show seeds. © Vijay Wagh.

(NL) (WAG0250919), Sri Lanka: George Henry Kendrick Thwaites, 3851 (BM012564187), Burma, Upper Burma, Sagauig, 04.xi.1892, Abdul Huk 1078 (BM01256419); Koulou, eschenault, 876 (P02748310); Thousaoin Meilen, 1902, Shaik Mokim 617 (UMPU685216); Upper Burma, Nov 1890, Abdul Huk, s.n. (P02748314); Upper Burma, Kyoukse, 02.ii.1893, King's Collector G6 (NL) (L.2044893).

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