**Additions to the Flora of South Indian States**

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**Abstract:** Four species namely *Cylindropuntia ramosissima* (Engelm.) F.M. Knuth (Cactaceae), *Hypoestes sanguinolenta* Hook. (Acanthaceae), *Solanum sisymbriifolium* Lam. (Solanaceae) and *Sphagneticola trilobata* (L.) Pruski (Asteraceae) are reported here as new records to the following South Indian states Kerala, Tamil Nadu, Karnataka and Andhra Pradesh respectively. Detailed description with color photographs and notes are provided for easy identification.

**Keywords:** Acanthaceae, Asteraceae, Cactaceae, Solanaceae, South Indian states, New records.

**Introduction**

During the field surveys between 2010 and 2015 in South India the first author has collected some invasive and introduced species found growing luxuriantly in the protected areas, wastelands, along the streams and canals. Further, it is also noted that they have the capability of replacing the native species in their habitat. A perusal of literature (Gamble, 1915-36; Sharma et al., 1984; Henry et al., 1987; Pullaiah & Alimoula, 1997; Reema Kumari, 2004; Sasidharan, 2004; Nayar et al., 2006; Sudhakar Reddy et al., 2009; Nayar et al., 2014) and consultation of available herbarium specimens at BSI, BSID, MH, KFRI, TBGT & RHT shows that they are additions to the South Indian states, i.e. *Cylindropuntia ramosissima* (Engelm.) F.M. Knuth (Cactaceae) to Kerala, *Hypoestes sanguinolenta* Hook. (Acanthaceae) to Tamil Nadu, *Solanum sisymbriifolium* Lam. (Solanaceae) to Karnataka and *Sphagneticola trilobata* (L.) Pruski (Asteraceae) to Andhra Pradesh. The detailed description, distribution, important notes, specimen examined and color photographs of these four species are provided for easy identification.

**Figure 1.** A, A1. *Cylindropuntia ramosissima* (Engelm.) F.M. Knuth habit; B. Flower close up. C. *Hypoestes sanguinolenta* Hook. habit; D & E. Close ups of flower & fruit. F. *Solanum sisymbriifolium* Lam. habit; G. Flower close up. H, H1. *Sphagneticola trilobata* (L.) Pruski habit; I. Flower close up.

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**Local names:** English: *Pencil Cactus*, *Diamond Cholla*. Tamil: *Velikalli*. Malayalam: *Surai Mullu*

Subshrub, profusely branched, branches scandent at times, up to 1.6 m tall; branchlets segmented, rope-like, cylindric, green; tubercles rhombic, ultimately flattened, 6-7 x 3-4 mm; areoles subcircular, 3 x 1 mm. Spines yellowish brown, 0-3 per areole, one at maturity, 1.5-4.5 cm long, sheathed with brown papery layer, surrounded by tuft of bristles at base. Flowers on short lateral shoots, in axils of tubercles, 1.5-3 x 1-1.2 cm; tepals many, outer ones ovate, 5.5 x 3 mm, acuminate, greenish; inner ones obovate, 6 x 3 mm, acute or attenuate, red to rose with darker midstripe. Stamens many; filaments 2.5 x 1.3 cm, tuberculate, areolate, with bristly spines; seeds circular or angular, 3.5-4 mm in diam., yellow or grayish.

**Fl. & Fr.:** December – February

**Habitat:** Scrub jungles, open and wastelands.

**Distribution:** India: Kerala (Malappuram; Palakkad) and Tamil Nadu. Mexico and USA.

**Note:** It is an invasive cactus plant introduced from south western USA to India might be as a garden plant. It is now escaped, naturalized and widely spreading due to its vegetative propagation. This plant is also used as hedge plant by the farmers to protect crops from grazing as it possesses very long spines.

**Specimen examined:** India: Kerala, Palakkad district, Attapadi foot hills, on the way to Mannarkad, 70 m, 21.01.2013, J.V. Sudhakar 126379 (MH). Malappuram district, Vettathur, 50 m, 21.01.2013, J.V. Sudhakar 126380 (MH).


**Local name:** English: *Freckle face*

Herbs, 30-40 cm high; stem tetrangular, jointed, puberulous to pubescent; internodes 2.5-6 cm long; branchlets compacted with persistent bracts. Leaves opposite, lamina equal or unequal at each node, 1.5-5 x 1-3 cm, ovate to elliptic, acute, cuneate at base, entire at margin, acute at apex, variegated, usually dark green or purple with white to pinkish dots; petiole 0.5-4 cm long, puberulous. Flowers axillary or terminal; bracts 4 or 5-lobed, compacted with axis, unequal in size, 1-1.3 x 0.1-0.3 cm, hirsute, dark green or brown. Sepals 5, tubular, 5-6 mm long, lobed at apex, lobes lanceolate, 2-2.5 mm long, pale white, hirsute. Petals pink, tubular, narrow at base, dilated and bilipped at apex, 1.2-1.5 cm long, lower lip shallowly 3-lobed, lobes obtuse, upper lip 2-lobed, one straight, other one curved, pubescent without. Stamens 2, 4-6 mm long, filaments 2-3 mm; anthers oblong, lobes 1.6-2.5 mm long, white or yellowish. Ovary oblong, 1.5-2 mm, tip pointed, glabrous; ovules 4; style 1.4-1.6 cm long, stigma acute or slightly bifid. Fruit capsule, elongated, 1-1.3 cm long, puberulous to pubescent, with persistent sepals at base; seeds 4, oblong, oblique at base, obtuse, truncate at apex, 1.4 x 0.7 mm, glabrous without, puberulous within.

**Fl. & Fr.:** December – March

**Habitat:** Foot hills, slopes and along the roadsides.

**Distribution:** India: Kerala and Tamil Nadu (Coimbatore-Anamalai hills; Nilgiris-Nilgiri hills; Dindigul-Palani hills; Salem-Shevaroys). Madagascar and North America.

**Note:** It is a native of Madagascar introduced in India as ornamental plant. It is now escaped and naturalized in reserve forests of Kerala and Tamil Nadu. It can be easily identified in the field based on colorful variegated leaves with the dots of white, pink, green and red.

**Specimen examined:** India, Tamil Nadu, Coimbatore district, Anamalai hills, Valparai, Sirukundra, way to Cinkona, 1130 m, 14.01.2015, J.V. Sudhakar 120045 (MH).
Nilgiris district, way Coonoor to Ooty, Wellington, 1880 m, 11.07.2015, J.V. Sudhakar 120055 (MH).


**Local names:** English: Sticky nightshade. Hindi: *Jangli bhatta*. Tamil: *Thoolthakkali*

Herbs or undershrubs, up to 1 m high, prickly throughout, stellate-pubescent; prickles 0.5-2 cm long, straight or recurved, base bulbous yellow, apex narrowly acute, reddish orange; stems and branches terete, green, hollow on mature; internodes 4-7 cm long. Leaves simple, alternate, lanceolate to linear-ovate, deeply bipinnate; pinnae 8-13, oblique or truncate at base, serrate at margin, acute-acuminate at apex, prickly on both surfaces; petioles 1.5-5 cm long. Inflorescence a raceme, extra-axillary, 3-10-flowered, up to 12 cm long; peduncles ca 4 cm long. Flowers regular; pedicels ca 1.5 cm long. Calyx cupular, 1-2 cm long, 5-lobed; lobes triangular-ovate, acute, 0.6-0.8 cm long, stellate-pubescent, prickly. Corolla rotate, white to purple, 5-lobed; lobes elliptic or ovate, 0.8–1 x 0.4–0.7 cm, puberulous. Stamens 5, equal; filaments ca 2 mm long, epipetalous for ca 1 mm; anthers oblong, 0.7–1 mm long. Disc annular. Ovary subglobose, ca 2 mm in diam., 3 or 4-loculed; style ca 2 mm long; stigma capitates. Berries globose, 1-1.5 cm in diam., glabrous, red; fruiting calyx accrescent, 1.5-2.5 cm long; seeds ca 90 in each berry, discoid, 2-2.5 mm long, pale brown.

**Fl. & Fr.:** Almost throughout the year

**Habitat:** In wastelands, Evergreen, semi-evergreen forests and borders of sholas of high altitude.

**Distribution:** India: Gujarat, Karnataka, Kerala, Maharashtra, North-East India, Tamil Nadu, Uttar Pradesh and West Bengal. America, Asia and Africa.

*Note:* It is native of South America, naturalized in tropical countries. Pharmacognostic and phytochemical studies (Prajapati et al., 2013; Vinod Kumar Gupta et al., 2014) revealed that all plant parts contain high medicinal value.

**Specimen examined:** India, Karnataka, Chamarajanagar district, Bandipur National Park, on the way from Mudumalai, near Bandipur, 1012 m, 28.8.2012, J.V. Sudhakar 126333 (MH). Mysore district, Mysore, J.P. Nagar, near nursing home, 28.06.2009, *P. Thimme Gowda* s.n. (MH).


**Local names:** English: Creeping daisy, Singapore daisy, Yellow dots.

Herbs, perennial, prostrate or diffuse, rooting at basal nodes; stem terete, puberulous or glabrous, green. Leaves simple, opposite-decussate, subsessile, elliptic-ovate or broadly ovate, 3-7 x 2.5-5 cm, usually with 3 (-5) angular lobes with toothed margins, sometimes upper ones unlobed, acute at apex, basally cuneate, forming a short petiole, slightly encircling the stem at the nodes, scabrid above, puberulous to glabrous beneath; 3-nerved at base, lateral nerves 2-3 pairs. Heads usually in upper axils of leaves, solitary with long peduncles, yellow, 1.5-2 cm in diam.; peduncles, ebracteate, 5-15 cm long, strigose. Involucre green; involucral bracts lanceolate or oblong, 0.9-1.1 cm long, acute or obtuse, ciliate. Ray florets 5-9, unisexual (female); corolla yellow, 0.9-1.5 x 0.4-0.5 cm, 3-4-denticulate at apex. Ovary trigonous; style exerted; stigma bilobed, slightly hairy. Pappus connate into a spathiform, fimbriate cup at apex, without awns. Disc florets many, bisexual; corolla yellow; tube 5-9 mm long, 5-lobed; lobes deltoid, densely ciliate within. Anthers syngeneciou, included, usually black. Ovary oblong, biconvex; style bifid, flattened, pubescent at margins. Achenes crowned with the persistent pappus cup, 3-4 x 5-6 mm, strongly warty, blackish, dimorphic, trigonous and mostly sterile of ray florets, lenticular and fertile of disc florets.

**Fl. & Fr.:** Almost throughout the year
**Habitat:** Along streams, canals and river banks, also in gardens.

**Distribution:** India: Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Tropical America, Mexico and Neotropics.

**Note:** Introduced as ornamental garden plant and now runs wild causing threats to native flora. It’s a creeping, evergreen and perennial herb with luxuriant growth forming mats along streams, canals, river banks and foot hills. Pharmacognostic study (Govindappa et al., 2011) proved that this plant contains antimicrobial, antioxidant and anti-inflammatory activities.

**Specimen examined:** India, Andhra Pradesh, East Godavari District, Maredumilli, behind Vanavihar Eco-tourism complex, 25 m, 3.8.2010, J.V. Sudhakar 122928 (MH); Sakhinetipally Mandal, Rambag, along the canals, near Antervedi, 2 m, 1.11.2011, J.V. Sudhakar 122974 (MH).

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**References**

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