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Cover: Pseudo-flying animals and wind-dependent seed & spore dispersers – made with digital painting in Krita. © Melito Prinson Pinto



Occurrence of *Ranunculus sceleratus* L. (Ranunculaceae) from the Nilgiri District, Tamil Nadu, India

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The genus *Ranunculus* Linnaeus (Ranunculaceae) consists of herbaceous, annual, and perennial species. The genus is distributed on all continents except Antarctica and the largest number of species occurs in temperate zones of Europe, Asia, North & South America, Australia, New Zealand, and in the alpine regions of New Guinea (Johansson 1998). The genus comprises ca. 600 species (Tamura 1995; Wencai & Gilbert 2001; Horandl et al. 2005; Mabberly 2008; Srivastava 2010). In Asia, the genus is distributed in Japan, Korea, China, India, Nepal, Bhutan, Thailand, Pakistan, Afghanistan, Iran, Mongolia, Egypt, and Syria (Lone & Dar 2016). In India it is almost restricted to eastern and northwestern Himalaya (Rau 1993) and is represented by 21 species and six varieties (Hooker & Thomson 1872). Rau (1993) in Flora of India included 33 species and one variety reported from Indian boundary.

During a recent medicinal plants survey of Udhamandalam, plant specimens of Nilgiri District belonging to the genus were collected. Critical study of the specimens followed by pertinent literature survey revealed the identity of the specimens as *Ranunculus sceleratus* L. The species was known so far from Himachal Pradesh, Madhya Pradesh, Delhi, Jammu & Kashmir

(Srivastava 2010). A further study of existing literature revealed that it was not prior reported from Tamil Nadu. The current distribution of *Ranunculus* in Tamil Nadu is restricted to four species, viz., *Ranunculus muricatus* (it is native to Europe), *R. reniformis* (The species is native of Western Ghats of peninsular India, particularly from Tamil Nadu, Kerala, and Rajasthan), *R. subpinnatus* (native of this species is southern Western Ghats, eastern Himalaya to Assam), and *R. wallichianus* (it is an endemic species to Western Ghats and Sri Lanka) were reported in Tamil Nadu, all reported from The Nilgiris (Hooker & Thomson 1872; Fyssen 1915; Gamble 1915; Sharma 1993; Nair & Henry 1983; Srivastava 2010). The present finding from Nilgiri District not only extends its distribution to Tamil Nadu, but also forms an addition to the Ranunculaceae of Tamil Nadu and new record to southern India. As it is reported from Tamil Nadu for the first time, a brief description of the species along with field photographs and notes are provided herewith to facilitate its easy identification. The voucher specimens were deposited and are being maintained at Survey of Medicinal Plants & Collection Unit & Homeopathic Medicinal Plant Research Garden Herbarium (SMPRGH), Emerald, The Nilgiris, Tamil Nadu, India.

Editor: Anonymity requested.

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Image 1. *Ranunculus sceleratus* L.: A—habit of the plant | B—a flowering twig | C—leaves | D—a flower: side view | E—a flower: top view.
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Taxonomic treatment

***Ranunculus sceleratus* L.**, Sp. Pl. 551. 1753; Hook.f. & Thoms in Hook.f., Fl. Brit. India 1: 19. 1872; Rau in Sharma et al., Fl. India 1: 128. 1993; Saini, J. Econ. Taxon. Bot. 29(3): 533. 2005; Maliya & Datt, J. Econ. Taxon. Bot. 34(1): 46. 2010; Srivastava, Taiwania 55(3): 290, f. 33. 2010. (Image 1, 2)

Annual herb, erect, fleshy. Roots fibrous, subequally thick. Stems 10–90 cm high, glabrous or sparsely pubescent; stem stout, branched, hollow, deeply furrowed outside. Radical leaves petiolate, reniform, 2.5–5.0 cm in diam., 3-lobed or 3-partite; segments obovate, bluntly 3– 5-toothed; lateral lobes sometime deeply bilobed again, lobes irregularly shallow crenate;



Image 2. *Ranunculus sceleratus* L.: A—dissected sepals of the flowers | B—dissected petals of the flowers | C—dissected anthers of the flowers | D—dissected gynoecium of the flowers | E—a fruit of the plant. © J. Shashikanth & S.Mugendhiran.

petioles 2.5–5.0 cm long, progressively shortened and ultimately sessile in cauline leaves, auricles scarious, 5 mm long; cauline leaves sessile, 3-lobed or 3–5 partite, lobes linear-oblong, entire or deeply crenate or lobulate. Flowers numerous, ca 1 cm in diam., bright yellow, diffusely racemose; pedicel 0.5–1.5 cm, glabrous, Sepals 5, ca 4 mm long, ovate-elliptic, ovate, pubescent outside, reflexed, caduceus. Petals 5, imbricate, shorter or as long as sepals, obovate, 4–6 × 3–4 mm, apex rounded or shallowly notched, claw inconspicuous; nectary pit small, pocket-like without nectary scale. Stamens 10–19; anthers ellipsoid. Aggregate fruit ovoid-cylindrical to cylindrical, 3–11 × 1.5–4 mm; carpels numerous.

Achenes small, slightly bilaterally compressed, obliquely obovoid, up to 1.3 mm in diam., beak inconspicuous, glabrous, compressed, smooth to 2- or 3-rugose, somewhat turgid along sutures; arranged in an oblong to shortly cylindrical, 7–8 mm long head; style short, minutely beaked; stigma persistent, ca 0.1 mm.

Flowering & fruiting: Throughout the year.

Distribution: India: Northern India, Himalaya, Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Uttarakhand, Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, West Bengal, Assam, Arunachal Pradesh, Manipur (Srivastava 2010), and Tamil Nadu (Present study).

Habitat: Marshes, damp areas stagnant water, and

sewage channels.

Specimen examined: 9440(SMPRGH), 21.i.2020, India, Tamil Nadu, The Nilgiri District, Udhagamandalam, on the way from Ooty bus stand to Mysore road (24.593°N, 86.153°E), 2,275m, coll. J. Shashikanth.

Taxonomic note: *Ranunculus sceleratus* L. is morphologically similar and possibly closely related to *R. saradous*. Both are annuals, 3-partite leaf blades and reflexed sepals. However, *Ranunculus sceleratus* differ from *R. sardous* in presence of oblancheolate leaf segments, glabrous or sparsely pubescent stem, ovoid-cylindrical to cylindrical aggregated fruits and having numerous achenes. Furthermore petals shorter or as long as sepals, achenes inflated, beak inconspicuous when compared with those of *Ranunculus sardous* (Eun-Mi Sun 2019).

Conservation status: As per Maiz-Tome (2016), the species is Least Concern on the IUCN Red List. In Tamil Nadu as the plant has so far been reported from Udhagamandalam, Nilgiri District only. However, futuristic surveys are recommended to assess its status in different regions in Tamil Nadu. At present, the species is restricted to a very few populations which are under severe threat due to tourism related activities, since Udhagamandalam is one of major tourist destinations in Tamil Nadu. The present populations of *Ranunculus sceleratus* L. is also facing serious threat from human interventions and natural calamities like floods and grazing of street animals.

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