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A NEW SPECIES OF *HEDYOTIS* (RUBIACEAE) FROM INDIA

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A new species, *Hedyotis rajasekaranii* Karupp. & Ravichandran (Rubiaceae), is described from the Megamalai Hills of the Western Ghats in Tamil Nadu, southern India.

Keywords. Conservation status, *Hedyotis*, India, Rubiaceae.

Introduction

The genus *Hedyotis* L. (Rubiaceae), in the wide sense, occurs throughout the tropical and subtropical regions of the world. Using a broad circumscription of this large and heterogeneous genus it contains approximately 515 species (Terell & Robinson, 2003; Dutta & Deb, 2004). In this sense the genus contains herbs and woody shrubs; the inflorescences may be panicles, corymbs, or umbellate to condensed capitate cymes; the flowers are usually 4-merous; the capsules vary from globose to ovoid or ellipsoid, dehiscing septicidally or loculicidally or the fruit is indehiscent; the seeds are minute, angled and embedded in the central placenta. The genus *Hedyotis* has variously been included in the subfamilies Rubioideae (Bremer, 1996) or Hedyotidae (Bremekamp, 1966; Robbrecht, 1988). Recent molecular studies have revealed that the broadly circumscribed *Hedyotis* is polyphyletic and that the name *Hedyotis* should be restricted only to the shrubby and septicidally dehiscing, capsular-fruited species distributed in tropical Asia (Guo *et al.*, 2011). Moreover, there has been considerable controversy over the delimitation of *Hedyotis*, even in this narrower sense, and *Oldenlandia* L. since the two genera were first proposed by Linnaeus (1753). A number of authors have combined the two genera under *Hedyotis* in the tribe Spermacoceae (Terell *et al.*, 2005; Groeninckx *et al.*, 2009; Guo *et al.*, 2011).

There are about 75 species of *Hedyotis* in India, many of them restricted to the hillier parts of southern India, especially the Western Ghats (Dutta & Deb, 2004). During routine botanical exploration of the Megamalai Hills of the Western Ghats, in the Theni District of Tamil Nadu, specimens of an interesting *Hedyotis* species were collected. They were critically studied against the pertinent literature and compared to specimens housed in Indian herbaria. The study revealed that the specimens belong to a new species allied to *Hedyotis shettyi* K.Ravik. & V.Lakshm. The new species is described and illustrated here. It can be distinguished from *Hedyotis shettyi* by the characters in Table 1.

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TABLE 1. Diagnostic characters of *Hedyotis shettyi* and *H. rajasekaranii* sp. nov.

Characters	*Hedyotis shettyi*	*Hedyotis rajasekaranii* sp. nov.
Branchlets	Terete throughout, not grooved	Subterete to angular, grooved
Stipule margin	Laciniate	Dentate-laciniate
Stipular glands	Basal, 2 on either side; central laciniae longer than laterals	Marginal, throughout the margin; central laciniae more or less similar to laterals
Leaves	Lanceolate, shiny; acute to cuneate at base; lateral nerves 2–4 pairs, penninerved, glandular pubescent above	Elliptic-ovate, not shiny, obtuse to rounded at base; lateral nerves 2–3 pairs, oblique, arising from base, glabrous above
Head	Mostly solitary, rarely interrupted	3–5, not interrupted
Peduncles	Glabrous	Minutely hirsute
Calyx	3–5 mm long, 4-toothed, sparsely pubescent, greenish at tip, less prominent midrib	5–8 mm long, 4–5-toothed, glabrous, brownish at tip, prominent midrib
Corolla	4.5–5.5 mm long, 4-lobed; lobes pink, c.2 × 1 mm, with a prominent central vein	8.5–10 mm long, 4–5-lobed; lobes pinkish purple, c.4 × 2 mm, without prominent vein
Stamens	4	4–5
Ovary	Brown	Creamy white
Style	Up to 2 mm long	Up to 13 mm long
Capsules	Oblongoid	Oblong-obovoid
Seeds	30–40, oblongoid or ovoid, obscurely 3-angled throughout	4–8, ovate-lanceolate, obviously 3-angled

Species Description

Hedyotis rajasekaranii Karupp. & Ravichandran, **sp. nov.**

Hedyotis shettyi K.Ravik. & V.Lakshm. affinis sed ramulis angulatis canaliculatis glabris, foliis elliptico-ovatis, obtusis vel rotundis ad basim, glabris, nervis lateralibus palmatis 2–3, obliquis, petiolis ad 8 mm longis, glabris; stipulis triangularibus, glabris, ad margines dentatis laciniatis vel glandulis, floribus in capitulis 3–5 terminalibus vel axillaribus dispositis, pedunculis angulatis, minute hirsutis, calycis tubo campanulato, lobis 4–5, glabris, costis prominentibus differt. – Type: India, Tamil Nadu, Theni District, Megamalai Hills near Kardana Estate, stream side on the way to Megamalai, ± 1350 m, 9°41.894′N, 77°24.049′E, 1 x 2012, *S. Karuppusamy & V. Ravichandran* 1402A (holo MH; iso Madura College Herbarium, Madurai [as *S. Karuppusamy & V. Ravichandran* 1402B], CAL [as *S. Karuppusamy & V. Ravichandran* 1402C & D]). **Fig. 1.**

Shrubs, up to 2 m tall, stout, woody; branchlets angular, glabrous, grooved with persistent leaf scars; internodes up to 2.5 cm long, usually short and congested at branchlet apices. *Stipules* triangular, c.6 × 4 mm, glabrous, thick, margin dark brown-lined, with brown glandular hairs, dentate-laciniate at apex. *Leaves* elliptic-ovate, 3–7 × 0.5–2 cm, not shiny, obtuse to rounded at base, acute at apex, subcoriaceous, entire, glabrous on both sides, dark green above and yellowish below, crowded at apices of branchlets; lateral nerves 2–3, oblique, arising from the base; petioles up to 8 mm long, glabrous. *Inflorescence* a dense head, 3–5-flowered, mostly terminal but often axillary, c.2 cm across; peduncle 1–3 cm long, 4-angled, minutely hirsute. *Flowers* c.8–10 mm long. *Calyx* tubular, campanulate, 5–8 × 0.5–1.8 mm, shiny, 4–5-toothed, teeth triangular, c.2.5 mm long, apex acute, fleshy, glabrous, tip brownish, greenish below, with prominent midrib. *Corolla* tubular, 8.5–10 mm long, bluish purple, throat pinkish, densely hairy, glabrous outside, 4–5-lobed; lobes pink-purple, ovate-oblong, c.4 × 2 mm, entire, deflexed, glabrous, fleshy, without prominent veins. *Stamens* 4–5, attached at corolla throat, equal, erect, dorsifixed, dark brown, dehiscing longitudinally; filaments slender, 1.5–2.5 mm long, fleshy, glabrous. *Ovary* 2-loculed, creamy white; styles up to 13 mm long, fleshy, slender, heterostylous; stigmas 2, c.2 mm long, lineate, glandular tipped. *Capsules* oblong-obovoid, 2–3 × 1–2 mm, included in persistent calyx-tube, dehiscing septicidally into 2. *Seeds* 4–8, ovate-lanceolate, c.1 mm long, reticulate, angled, brown with many white membranous scales along margins.

Etymology. The new species is named in honour of Dr K. M. Rajasekaran, Department of Botany, The Madura College, Madurai, Tamil Nadu, India, for his valuable contribution to teaching and taxonomic research for more than 25 years.

Ecology. The new species is scarce in the undergrowth of dense evergreen forest, especially along perennial stream banks of the Kardana Estate and the surrounding area for a radius of c.10 km. The associated plant species include *Croton laccifer* L., *Ligustrum perrottetii* A.DC., *Alseodaphne semecarpifolia* Nees var. *angustifolia*

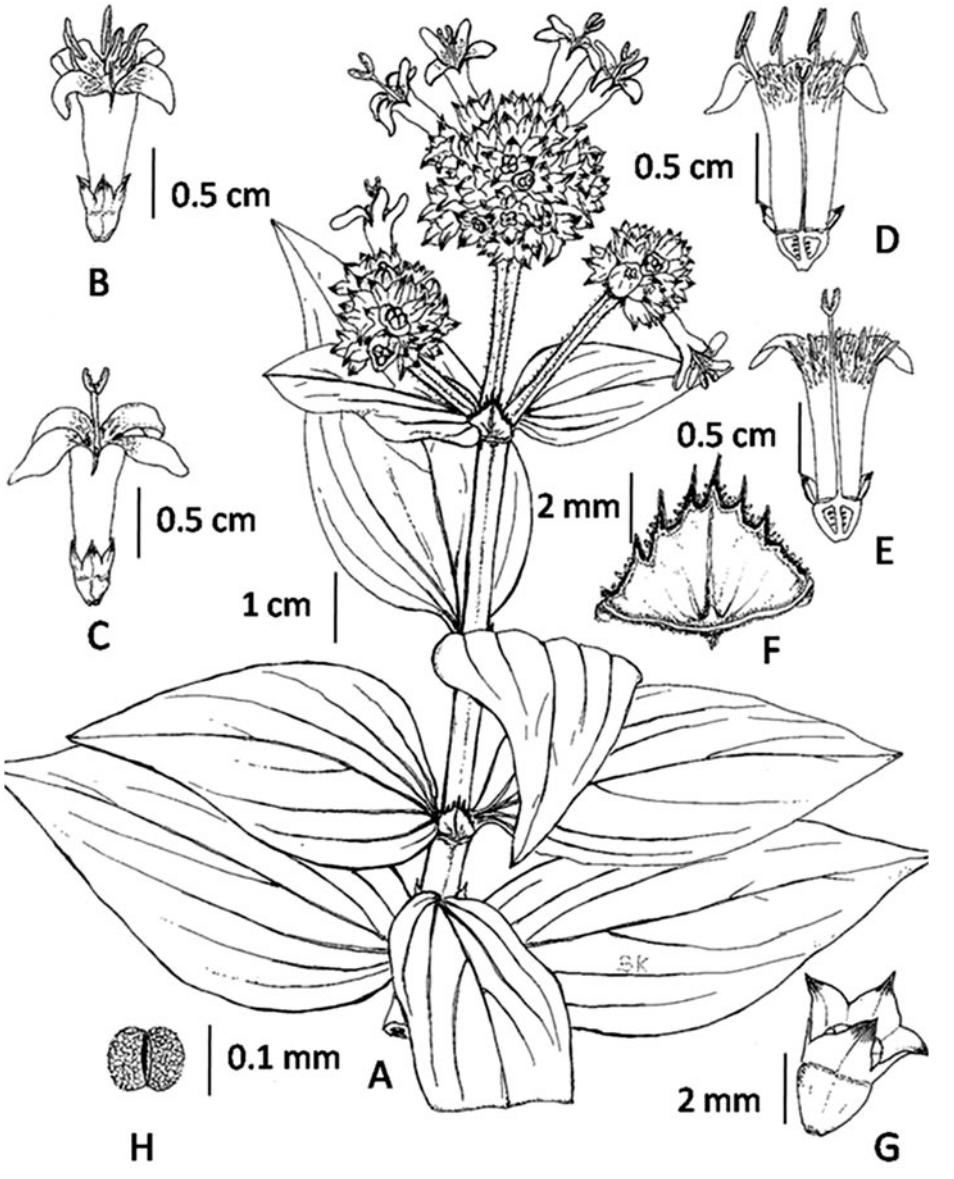

FIG. 1. *Hedyotis rajasekaranii* Karupp. & Ravichandran sp. nov. A, habit; B & C, entire flowers; D & E, longitudinal view of heterostylous flowers; F, stipule; G, fruit with persistent calyx; H, seed.

Meissn., *Clausena indica* Oliv., *Vernonia comorinensis* W.W.Sm., *Syzygium sriganesanii* K.Ravik. & V.Lakshm., *Syzygium myhendrae* (Bedd. ex Brandis) Gamble, *Phoebe wightii* Meissn., *Osbeckia aspera* Blume var. *wightiana* Trimen and *Mussaenda belilla* Buch.-Ham.

Flowering and fruiting. September to December.

Provisional conservation status. Endangered (ENB1ab(i,iii)). The species has a restricted distribution in the Kardana Estate range of the Megamalai Hills in the Theni District of Tamil Nadu. In this area the habitat is threatened by the extension of tea and cardamom cultivation. Even though the area has recently been designated as the Megamalai Wildlife Sanctuary by the Tamil Nadu Forest Department, fragmentation of the natural forest for agriculture continues unabated. Hence this species can be categorised as endangered under the IUCN 9.0 guidelines (IUCN, 2012).

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