

**Short communication**

Addition of *Gymnosporia rothiana* (Walp.) M.A. Lawson (Celastraceae), in the flora of southern Western Ghats, India

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[Accepted: 25 December 2019]

[Cite as: Vellingiri R & Murugan P (2019) Addition of *Gymnosporia rothiana* (Walp.) M.A. Lawson (Celastraceae), in the flora of southern Western Ghats, India. *Tropical Plant Research* 6(3): 524–527]

INTRODUCTION

The Western Ghats of India, one of the 34 biodiversity hot spots of the world (Myers *et al.* 2000, Mittermeier *et al.* 2004). Ahmedullah & Nayar (1987) has been classified this chain of mountain ranges into three phytogeographical regions *viz.*, Northern Western Ghats (River Tapti to Goa), Central Western Ghats (River Kalinadi to Coorg) and Southern Western Ghats (Malabar, Nilgiris, Anamalais, Palni hills, Tirunelveli hills complex and Travancore). The Old World genus *Gymnosporia* Wight & Arn. (Celastraceae) is occurring in Africa, nearby Atlantic Ocean Islands, southern Spain, Madagascar and other Indian Ocean Islands, SE Asia, Malesia, Australia and on the Polynesian, Micronesian and Melanesian Islands. It comprises over one hundred species (Jordaan & VanWyk 2015, Singh *et al.* 2015, Mabberley 2018). Lawson (1875) reported 16 species including eight novelties from British India. Gamble (1935) in the Flora of Presidency of Madras enumerated seven species in which three species are endemic to the Western Ghats. Ramamurthy (2000) revised the family Celastraceae for Flora of India and documented 17 species including two varieties, of which seven species and two varieties are endemic (Singh *et al.* 2015).

MATERIAL AND METHODS

During the systematic botanical exploration to the Wayanad Districts of Kerala, a part of Nilgiri Biosphere Reserve, Western Ghats, India, authors came across interesting specimens of the genus *Gymnosporia*. After critical examination and perusal of relevant literature (Wight 1834, Lawson 1875, Ramamurthy 2000, Ramamurthy & Venu 2005) and herbaria namely, BSI, CAL, Eand NY revealed that these materials are *Gymnosporia rothiana* (Walp.) M.A. Lawson. and it was hitherto not collected and reported from southern Western Ghats (Ramamurthy 2000, Sasidharan 2004, Ramamurthy & Venu 2005, Nayar *et al.* 2006, Nayar *et al.* 2014).

RESULTS

Taxonomic treatment

Gymnosporia rothiana (Walp.) M.A. Lawson in Fl. Brit. India 1: 620. 1875; *G. wightiana* (Babu) R.S.Rao in Fl. Goa, Diu, Daman, Dadra & Nagarhaveli (Fl. India, Ser. 2): 76.1985.

Celastrus rothiana Wight & Arn. in Prodr. Fl. Ind. Orient. 159. 1834, non Schult. 1822.

Celastrus serrulatus Roth, Nov. Pl. Sp. 156. 1821. non R. Br. 1814.

Catha rothiana Walp. In Repert. Bot. Syst. (Walpers) 532. 1842.

Maytenus rothiana (Walp.) Lobl.-Callen in Adansonia sér. 2, 15(2): 223. 1975. nom. invalid; Ramamoorthy in Fl. Hassan Dist. [Saldanha & Nicolson] 320. 1976; S.S.R. Benn. & K.S.Sahni in Indian forester 103: 387.1977; Ramamurthy in Fl. Ind. 5: 124. 2000.

M. wightiana Babu in Bull. Bot. Surv. India 349.1969.

Type: India, s.d. Wight 475 (E00174330 E!).

Large shrubs, 3m high. Branches terete. Leaves alternate, simple, broadly ovate, 10.5–15.5 × 6–10 cm, membranous, green above, pale beneath, acute at base, margins serrate, acute at apex; midrib greenish, turning brown later; lateral veins 8–12 pairs; petioles 0.8–2.2 cm long, greenish, turning brown later, canaliculated

above, young petioles covered with whitish powder withering when matured. Inflorescence axillary/lateral, fascicled cymes to 1 cm long; peduncles 3–4 mm long. Flowers bisexual, actinomorphic, pale green, 3–5 mm diam.; pedicel 3–10 mm long; bracteole 0.5×0.3 mm, tridentate, entire at margin, pale green; bract 0.4–0.5 mm long, reddish-brown, sub-deltoid, minutely ciliate at margins. Sepals 5, imbricate, greenish, ± 5 mm long, deltoid, ciliate at margins. Petals 5, 4–6 mm long, imbricate, oblong, obtuse, tip entire, pale green, inserted below the greenish turning yellow disk. Stamens 5, inserted below the disk, alternate to petals; filaments 7–8 mm long; anther ovate, *ca.* 2 mm long, basifixed; disk 5-lobed. Ovary 3-loculed, sunk in the fleshy disc; ovules 2 in each locule; style obscure, 0.5–1.0 mm long; stigma indistinct. Capsules loculicidal, 3-lobed, obtriangular, ± 12 mm long, cuneate below; locules 3 seed1 in only onelocule, mostly 2 locules unfertile; seeds ovoid, glossy $\pm 10 \times 6$ mm, reddish-brown in dry material, pale white in fresh specimens; aril white, fleshy rim at base of seed (Fig. 1).

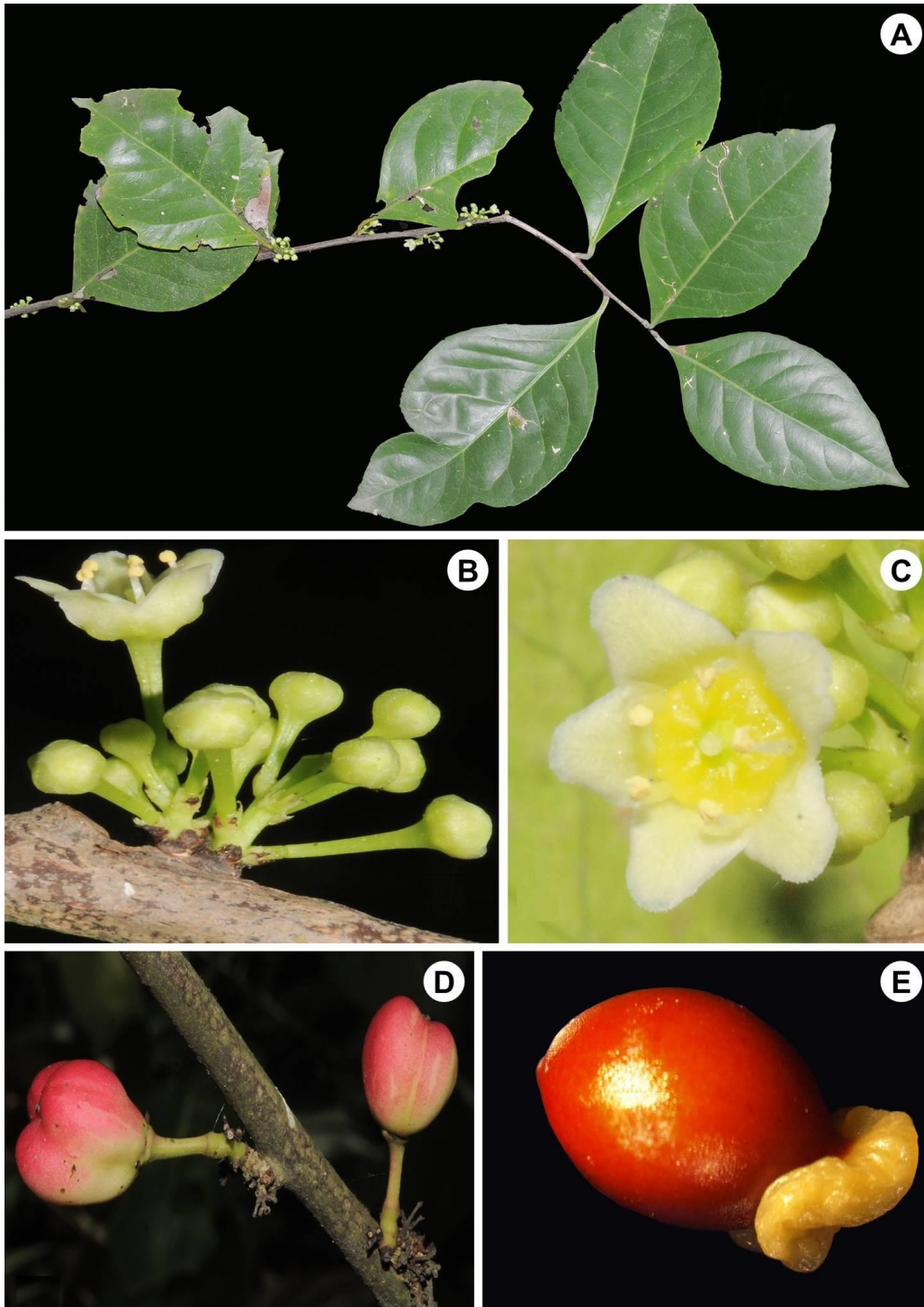


Figure 1. *Gymnosporia rothiana* (Walp.) M.A.Lawson (Celastraceae): **A**, Flowering twig; **B**, Inflorescence close up; **C**, Flower top view; **D**, Capsules; **E**, Seed.

Flowering and fruiting: May.

Ecology: *Gymnosporia rothiana* (Walp.) M.A. Lawson found in the evergreen forests of the Western Ghats, in Kerala part of Nilgiri Biosphere Reserve, Wayanad district, associated with *Meiogyne ramarowii* (Dunn) Gandhi, *Impatiens gardneriana* Wight, *Knema attenuata* Warb., *Jerdonia indica* Wight, *Ixora pavetta* Andr., *Nothopegia* sp., *Breynia vitis-idaea* (Burm.f.) C.E.C.Fisch., *Canthium travancoricum* Bedd., *Chionanthus malaelengi* (Dennst.) P.S.Green, *Gymnostachyum latifolium* T.Anderson, *Parsonsia alboflavescens* (Dennst.) Mabb., *Arenga wightii* Griff., *Reinwardtiodendron anamalaiense* (Bedd.) Mabb., *Miliusa nilagirica* Bedd., etc.

Distribution: INDIA (Maharashtra, Goa, Chhattisgarh, Madhya Pradesh, Karnataka and Kerala), Endemic (Fig. 2).

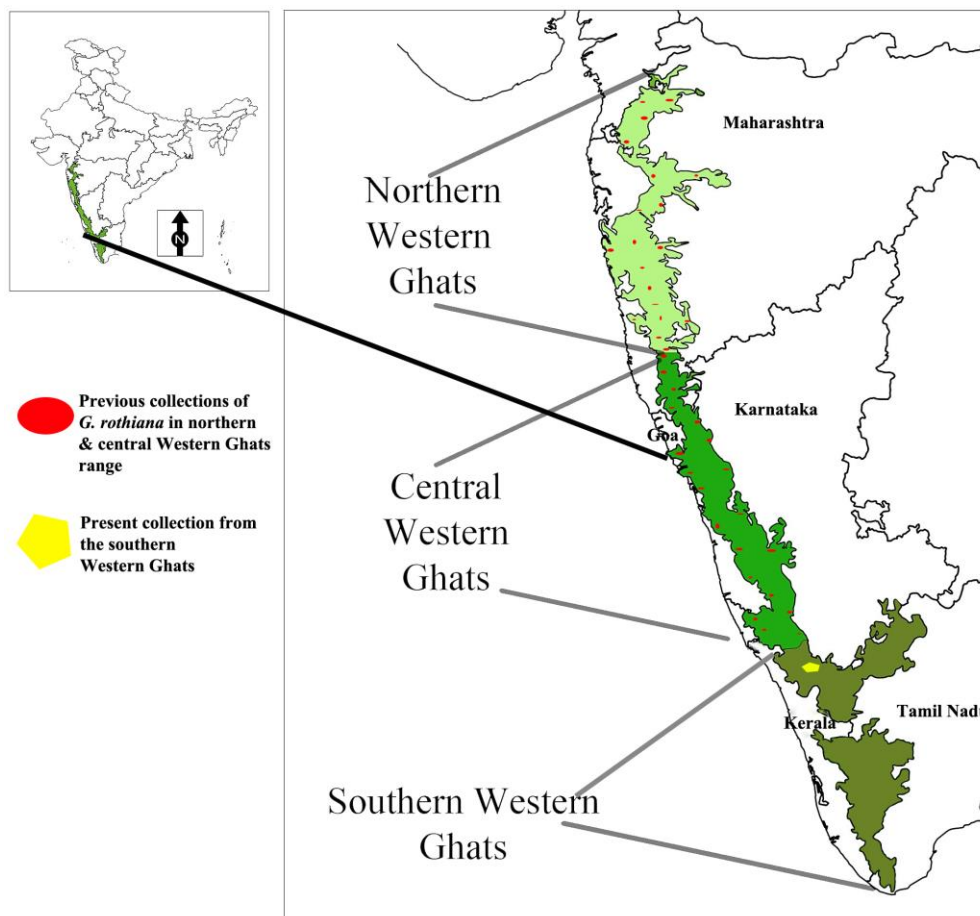


Figure 2. Distribution of *Gymnosporia rothiana* (Walp.) M.A. Lawson (Celastraceae) in the Western Ghats, India.

Specimens examined: India: Kerala: Wayanad District: 145730 (MH), 12.v.2019, Nilgiri Biosphere Reserve, Meenmutty, 11°31.720' N 076°14.224' E, 807 MSL, coll. V. Ravichandran & P. Murugan. Karnataka: Mysore District: 80639 (CAL), 15.v.1962, Kundadagudda, Agumbe, coll. R. SundaraRaghavan; Shimoga District: KFP1181 (CAL), 30.v.1978, in a valley slopes, Jog falls, coll. Syed Maqsood Ahamed; Hassan District: 16937 (CAL), 27.iv.1970, before Kempuhole camp, Shiradighat, coll. C.J. Saldanha; North Kanara. 411 (CAL), s.d. coll. W.A. Talbot; 19 (CAL), xi.1922, coll. W.A. Talbot. Maharashtra: Bombay s.n., (CAL), s.d., coll. N. Dalzell; Satara District: 166506 (BSI), 28. Xi. 1983, coll. S.D. Deshpande; 67616 (BSI), 11.x.1960, Mahabaleshwar, Arthur Point, coll. M.Y. Ansari; 71675 (BSI), 7.vi.1981, Near the Venna lake, coll. s. coll; 199073 (BSI), 27.ii.2013, Ozarde, Narja beat, Koyana Wildlife Sanctuary, coll. Prajakta S. Pathare; Ratnagiri District: 102295 (BSI), 23.xi.1969, coll. R.D. Patkar; 157792 (BSI), 23.xi.1978, on the way to Jungle, Jaigad, coll. R.K. Kocchar; Sindudurg District: 89884 (BSI), 8.viii.1963, Ambolighat forest, coll. K.C. Kapadia; Pune District: 12574 (BSI), 30.iii.1951, Bhimashankar, coll. G.S. Puri; 95990 (CAL), 4.ii.1964, Masgaon forest, Ambernath, 14 miles of Lonavla, coll. B. VenkataReddi; 69621 (BSI), 26.ii.1961, Bakadevika ram, Bhimashankar, coll. K.P. Janardhanan; 89943 (BSI), 15.v.1964, DurgaKallaplateu 19 miles west of Jummar, coll. K. Hemadri; Raigad District: 192882 (BSI), 13.ix.2007, on the way to Harte point, Matheran, coll. S.C. Majumdar & S.K. Das; Thane District: 110965 (BSI), 15.vi.1967, Top of the Naneghat, Tokwada range, coll. K.V. Billore.

Taxonomic remarks

Gymnosporia rothiana (Walp.) M.A. Lawson collected by the authors from the Wayanad district of Kerala forms the addition to the flora of southern Western Ghats from state of Kerala and also with the genus addition to the district of Wayanad. This species till now known only from the dry deciduous and moist deciduous forests of northern Western Ghats areas (Saldanha & Nicolson 1976) but the present collection from Evergreen forests, for this reason, it has many variations in leaves; fruits sizes and absence of thorns when compared to the type materials and other specimens at BSI, CAL,E, and NY it may be the evergreens forests form. The type specimen is collected by Robert Wight but there is no any precise locality and he never collected plants from Maharashtra and adjacent areas of northern Western Ghats, his collection may be the northern Western Ghats portions of Karnataka possibly Mysore areas because the floras covering southern Western Ghats did not include this species and this is the first report for this phytogeographical location.

ACKNOWLEDGEMENTS

The authors are thankful to Dr A.A. Mao, Director, Botanical Survey of India, Kolkata for facilities and encouragement, Dr. M.U. Sharief, Scientist-E & Head of Office, BSI, Coimbatore for his encouragement and Dr. C. Murugan, Scientist-E, BSI, Coimbatore for his needful suggestion, guidance and support. We sincerely acknowledge Dr. Marie Jordaan, and Dr. Abraham E. Van Wyk, H.G.W.J. Schweickerdt Herbarium, Department of Plant Science, University of Pretoria, South Africa for their critical comments on the identification of the species and we extended our thanks to the Forest Department of Kerala, India for permission and necessary help during the field study.

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