NOTE

**Record of **Oldenlandia hygrophila** Bremek. (Spermacoceae: Rubiaceae), a lesser known herb from Palghat Gap of Western Ghats, Kerala, India**

Vadakkeveedu Jagadesh Aswani, Vasudevan Ambat Rekha, Pathiyil Arabhi, Manjakulam Khadhersha Jabeena, Kunnamkumarath Jisha & Maya Chandrashekaran Nair

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Record of *Oldenlandia hygrophila* Bremek. (*Spermacoceae*: Rubiaceae), a lesser known herb from Palghat Gap of Western Ghats, Kerala, India

**Vadakkevedu Jagadesh Aswani**<sup>1,2</sup>, **Vasudevan Ambat Rekha**<sup>3</sup>, **Pathiyil Arabhi**<sup>3</sup>, **Manjakulam Khadhersha Jabeena**<sup>4</sup>, **Kunnakummarath Jisha**<sup>5</sup> & **Maya Chandrashekaran Nair**<sup>6</sup>

1,2,3,5 Post Graduate and Research Department of Botany, Govt. Victoria College (University of Calicut), Palakkad, Kerala 678001, India.  
3 Department of Botany, Mercy College (University of Calicut), Palakkal, Kerala 678006, India.  
4 Department of Botany, Baselius College (Mahatma Gandhi University), Kottayam, Kerala 686001, India.  
5 aswanivo@gmail.com (corresponding author), 6 vasudevanrekha94@gmail.com, 7 arabhip1@gmail.com, 8 jabeena1993@gmail.com, 9 balujisha@gmail.com, 10 drmayadhoni@gmail.com

The genus *Oldenlandia* L. (1753) belonging to the tribe *Spermacoceae* Chamisco & Schlechtendal ex de Candolle (1830) of the family Rubiaceae is well distributed in the tropical and subtropical regions of the world (Govaerts et al. 2013). In India, the occurrence of the genus *Oldenlandia* is often debated with variable number of citations as 27 species (Hooker 1880) in the Flora of British India and 45 species (Gamble & Fischer 1923) in the Madras Presidency region alone. Estimates reveal the documentation of 14 species and one variety from the state of Kerala (Sasidharan 2011; Jose et al. 2015; Soumya et al. 2017).

**Materials and Methods**

During the exploratory studies on the floristic diversity of granitic hillocks in Walayar forest range of southern Western Ghats, the authors came across this taxon growing on the rocky outcrops near the dam site of Malampuzha in Palakkad District in July 2017. The specimens of the taxon were procured and herbarium was prepared using standard herbarium procedures. The plant specimens were characterised, measured and illustrated.

The specimen was identified to be *Oldenlandia hygrophila* Bremek. collected by Prof. Vasudevan Nair in 1972 cited from Malampuzha dam vicinity of Palakkad District (Bremekamp 1974) and confirmed the taxa from the type specimens deposited at Kew Herbarium (*O. hygrophila*; bar code no: K000031277). Regional herbaria (MH, KFRI and CALI) were consulted to check the presence of earlier collections of the taxon and found that N. Sasidharan had collected the taxa from Thrissur District in 1987 (Acc. No. KFRI 6945, collection No: N.S. 4635). Later, the taxa was reported from Muthanga region of Wayanad District in Kerala by Ratheesh Narayanan (RNMK 2228) in 2009. The taxon
was not able to relocate from its type locality after its first collection by Prof. R. Vasudevan Nair in 1972. The acronyms for the herbaria follow the Index Herbariorum (Thiers 2018). The protologues of the allied taxa *Oldenlandia pumila* (L.f.) DC. and *Oldenlandia dineshii* Sojan & V. Suresh were also compared.  


Annual, erect, branched or unbranched herbs, 25–130 mm tall. Entire plant with sparsely distributed setiform cuticular protuberances. Stem quadrangular, minutely winged when old. Stipules connate, interpetiolar, 1.5–2

![Image](https://example.com/image1.png)

Figure 1. *Oldenlandia hygrophila* Bremek.: A—habit | B—portion of a flowering twig | C—single leaf | D—single flower | E—part of node showing stipules | F—calyx | G—corolla tube opened showing stamens | H—L.S. of flower | I—gynoecium | J—C.S. of ovary | K—capsule | L—seeds. © V.J. Aswani & A. Rekha Vaudevan.
Oldenlandia hygrophila from Palghat Gap
Aswani et al.

mm long, 1–1.2 mm wide, with three bristles, middle one longer than the other two. Leaves sessile, 5–12 mm × 2–5 mm, linear lanceolate, 1-nerved, lamina base attenuate, margins recurved. Flowers axillary solitary, 3–3.5 mm long, corolla lobes not spreading when open. Pedicel slender, 6–10 mm, hypanthium ovoid and both laden with setiform cuticular protuberances. Calyx lobes 4, 1.5–2 mm × 0.8–1 mm, reaching one fourth of the corolla tube, margins entire, apex acute. Corolla blue, tube 2–2.2 mm long, lobe 1mm long, oblong, apex acute, glabrous outside and with small hyaline hairs inside at the base. Stamens 4, inserted, adnate to sinus of corolla

Table 1. Taxonomic delineation of *Oldenlandia hygrophila* from *O. dineshii* and *O. pumila*

<table>
<thead>
<tr>
<th>Taxonomic Trait</th>
<th><em>Oldenlandia hygrophila</em></th>
<th><em>O. dineshii</em></th>
<th><em>O. pumila</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Habit</td>
<td>Erect herb, branched and unbranched, 25–130 mm tall</td>
<td>Erect herb, dichotomously branched 50–200 mm tall</td>
<td>Branched prostrate or diffuse herbs</td>
</tr>
<tr>
<td>Stem</td>
<td>4–angled, minutely winged with setiform cuticular protuberances</td>
<td>4–angled, minutely winged, glabrous</td>
<td>Acutely angular, minutely dentate on ribs</td>
</tr>
<tr>
<td>Leaf</td>
<td>Linear-lanceolate, setiform cuticular protuberances present, 5–12 × 2–5 mm</td>
<td>Linear-lanceolate, sparsely scabrid, 10–20 × 5–8 mm</td>
<td>Elliptic-lanceolate, 7–18 × 1–6 mm</td>
</tr>
<tr>
<td>Leaf margin and leaf apex</td>
<td>Entire with regular setiform cuticular protuberances, recurved, apex acute, base attenuate</td>
<td>Apex acute, base attenuate</td>
<td>Scabrid above along margin and midrib below</td>
</tr>
<tr>
<td>Stipules</td>
<td>Bristles 3, 1.5–2 mm long, base broad up to 1–1.2 mm, middle one longer than other two</td>
<td>Bristles 2–3, 2–4 mm long, base broad up to 5mm.</td>
<td>Bristles 2–5, 2–3 mm long</td>
</tr>
<tr>
<td>Inflorescence</td>
<td>Auxillary, solitary flowers alternating at nodes</td>
<td>Axillary, solitary or terminal 2–4 flowered cyme</td>
<td>Solitary or 2–flowered cyme</td>
</tr>
<tr>
<td>Flowers</td>
<td>3–3.5 mm long, blue</td>
<td>5–7 mm long, blue, campanulate</td>
<td>3–4 mm long, white</td>
</tr>
<tr>
<td>Pedicel</td>
<td>6–10 mm</td>
<td>4–6 mm long</td>
<td>10–15 mm long</td>
</tr>
<tr>
<td>Hypanthium</td>
<td>Ovoid with setiform cuticular protuberances</td>
<td>Ovoid, puberulous</td>
<td>Ovoid</td>
</tr>
<tr>
<td>Level of calyx lobes</td>
<td>One fourth of corolla tube</td>
<td>Much below the corolla tube</td>
<td>Below the level of corolla</td>
</tr>
<tr>
<td>Calyx</td>
<td>Margin entwined with setiform cuticular protuberances, apex acute 1.5–2 × 0.8–1 mm long</td>
<td>Margin setulose, apex acute, 0.7–1 × 0.5–0.7 mm long</td>
<td>Margin dentate, lobes 4, rarely 5, ovate–lanceolate or triangular, apex acute, 0.5–0.6 mm long</td>
</tr>
<tr>
<td>Corolla</td>
<td>Lobes not spreading, tube 2–2.2 mm long, lobes 1mm long, oblong, acute at tip, glabrous outside and minute hyaline hairs at the base of corolla tube inside, apex slightly reflexed</td>
<td>Broadly campanulate, tube 2.5–4 mm long, lobes 2.5–3.5 mm long, minutely pubescent outside glabrous inside, apex reflexed</td>
<td>2mm long, tube 1.2–1.3 mm long, pubescent at throat; lobes 0.5–0.8 x 0.5–0.6 mm, ovate, acute, incurved at apex.</td>
</tr>
<tr>
<td>Stamens</td>
<td>Inserted, filaments 0.25mm long, glabrous</td>
<td>Inserted, filaments 0.7–1 mm long, hairy</td>
<td>Included, filaments 0.2–0.3 mm long</td>
</tr>
<tr>
<td>Anther</td>
<td>0.75mm</td>
<td>1–1.2 mm</td>
<td>3–4 mm long</td>
</tr>
<tr>
<td>Stigma</td>
<td>Bilobed, papillose</td>
<td>Bifid, hispid</td>
<td>Bilobed, papillose fleshy, tufted hairy</td>
</tr>
<tr>
<td>Capsule</td>
<td>Sub–globose 2+2 mm</td>
<td>Ovoid, 2.5–3 × 1.5–2.5 mm</td>
<td>Ellipsoid or oblong–ovoid</td>
</tr>
<tr>
<td>Seed</td>
<td>Many, angular, with minor grooves 0.2–0.3 x 0.2–0.3 mm</td>
<td>Many, angular 0.3–0.5 x 0.3–0.5 mm</td>
<td>Many, 0.7 x 0.1 mm, angular</td>
</tr>
</tbody>
</table>

lobes, intorse. Filaments 0.25mm long, glabrous. Anthers linear 0.75mm. Style 1.5mm long, glabrous. Stigma bilobed, 1mm, densely papillose. Ovary 1×1mm, 2–celled, many ovuled in axile placentation. Capsule sub-globose, 2×2 mm, loculicidally dehiscent from apex, with slightly raised crown above. Seeds numerous, trigonal, reticulate 0.3×0.2 mm.


Phenology: Flowering: June–August; Fruiting: July–September.

Distribution: India, Kerala: Palakkad, Wayanad, Thrissur districts.

Additional specimens examined: K000031277 (K), s.n. 1972, India, Kerala, Malampuzha near Palghat hardly 100m below, coll. R. Vasudevan Nair; 6945(KFRI), Collection no: N.S. 4635, 22.ix.1987, Peechi, Thrissur, coll. N. Sasidharan.

ex Roxb., Desmodium triflorum (L.) DC. and Polygala persicariifolia DC.

Threat status: This taxon could not be recollected from its earlier reported locations of forest areas in Thrissur and Wayanad districts of Kerala except from its type locality near Malampuzha Village very near to Malampuzha Dam region of Palakkad District, Kerala after its first collection in 1972. Exhaustive surveys across Palghat gap region covering the nearby forest ranges also could not locate the taxon. This gives us evidence of its narrow distributional range and that it can considered endemic to southern Western Ghats (restricted to Kerala). Till date, the taxon’s existence was doubted due to lack of collection or further reports. This may be the reason that the taxon has not yet been evaluated as per the IUCN Red List 2019. Since the population size is very small, distributed in a narrow stretch of hydro-geomorphic habitats of less than 10km², the taxon can be assigned the status of Critically Endangered (CR) as per IUCN version 2019-3 (IUCN 2019).

Taxonomic delineation of *Oldenlandia hygrophila* from *O. dineshii* and *O. pumila*

*Oldenlandia hygrophila* is similar to *O. dineshii* in quadrangular stem and possession of blue flowers, but differs in the presence of setiform cuticular protuberance all over the plant, solitary flowers smaller in size (2.5–3.0 x 1.5–2.0 mm), corolla lobes not spreading when open, sepals reaching one fourth the length of corolla tube, corolla tube glabrous outside, but with hyaline hairs at the base inside and glabrous staminal filaments. *O. hygrophila* differs from *O. pumila* in having erect nature of plant, linear-lanceolate leaves, solitary axillary blue flowers, shorter pedicels, calyx lobes reaching one-fourth the level of corolla lobes, corolla with minute hyaline hairs at the base of corolla tube inside and with sub–globose capsule. Comparison of taxonomic characters of *O. hygrophila* with *O. dineshii* and *O. pumila* is given in Table 1.

References


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