Luisia trichorrhiza var. flava (Orchidaceae): a new variety from Assam, India

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Keywords/Mots-clés: Luisia, North East India/Inde du nord-est, orchid flora/flore d’orchidées.

Abstract
A new variety of Luisia, Luisia trichorrhiza (W.J.Hooker) Blume var. flava, is described and illustrated from Assam, North East India. It is morphologically similar to L. trichorrhiza but distinctly differs from the latter by a 9-10 flowered inflorescence with yellowish green flowers.

Résumé
Luisia trichorrhiza var. flava (Orchidaceae): une variété nouvelle originaire d'Assam (Inde) – Une nouvelle variété de Luisia, Luisia trichorrhiza (W.J.Hooker) Blume var. flava, originaire de l’État d'Assam dans le nord-est de l'Inde, est décrite et illustrée. Elle est similaire à L. trichorrhiza sur le plan morphologique mais en diffère par une inflorescence à 9-10 fleurs vert jaunâtre.

Luisia is a small genus in the family Orchidaceae. It was established in 1826 by Charles Gaudichaud-Beaupre in Louis de Freycinet’s Voyage sur I’Uranie et La Physicienne. The genus is named in honour of Don Luis de Torres, a Portuguese Botanist of the nineteenth century (Chowdhery, 1998). Taxonomically, it is a very difficult genus due to low morphological variations among the different species (Seidenfaden, 1971; Misra, 2010). About forty species are distributed in Bhutan, China, India, Indochina, Indonesia, Japan, Malaysia, New Guinea, Pacific islands, Philippines, Sri

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In India there are nineteen species which are mainly found in the Northeastern states, Peninsular India, Andaman and Nicobar Islands (Misra, 2007).

Luisia trichorrhiza (W.J. Hooker) Blume is a common epiphyte in the Tea garden areas of Assam. During my work for an Orchid flora of Assam in March 2016, I found ten plants of Luisia trichorrhiza growing epiphytically on trunks and branches of trees of the Daisajan Tea garden of the Tinsukia District of Assam. They were found growing in clump with a long green stem and terete leaves, all of them in flowering condition. Out of these, two clumps growing on the same trunk were noticed: they resembled Luisia trichorrhiza, but differed in inflorescence, floral and morphological characters (Tab. 1). They were collected for research purposes. A critical study of these plants once in bloom and the scrutiny of the available literature (King & Pantling, 1898; Pradhan, 1979; Pearce & Cribb, 2002; Chowdhery, 1998; Lucksom, 2007; Yonzone & Rai, 2012; Gogoi, 2012; Gogoi et al., 2015) and herbarium matching revealed it to be very distinct from the so far known specimens of Luisia trichorrhiza (Plate 1). The taxon is described here as a new variety.

**Plate 1: Luisia trichorrhiza**

A1: inflorescence; B1: flower; C1: perigone; D1: lip with ovary and column; E1: lip; F1: ovary and column; G1: column; H1: pollinia; I1: anther cap
Table 1: morphological characters of both varieties

<table>
<thead>
<tr>
<th>Plant character</th>
<th>Luisia trichorrhiza</th>
<th>Luisia trichorrhiza var. flava</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stem</td>
<td>14-75 × 0.4-0.7 cm, stout</td>
<td>25-50 × 0.4-0.5 cm, stout</td>
</tr>
<tr>
<td>Leaf</td>
<td>10-13.5 × 0.4-0.5 cm</td>
<td>13.5-16.5 × 0.45 cm, curved downwards</td>
</tr>
<tr>
<td>Inflorescence</td>
<td>1.5 cm long, 5-6 flowered</td>
<td>1 cm long, 9-10 flowered</td>
</tr>
<tr>
<td>Flower</td>
<td>0.5-0.9 cm across, sepals pale green with faint purple lines, lip dark purple, the base outlined with green lines, the apical ridges green, column purple</td>
<td>0.6-0.8 cm across, sepals and petals yellowish green, lip yellow, column yellowish green</td>
</tr>
<tr>
<td>Dorsal sepal</td>
<td>0.5 × 0.21 cm, pale green with faint purple lines</td>
<td>0.5 × 0.3 cm, yellowish green</td>
</tr>
<tr>
<td>Lateral sepal</td>
<td>0.61 × 0.2 cm, pale green with faint purple lines</td>
<td>0.7 × 0.25 cm, yellowish green</td>
</tr>
<tr>
<td>Petals</td>
<td>0.9 × 0.15 cm, pale green with faint purple lines</td>
<td>0.7 × 0.18 cm, yellowish green</td>
</tr>
<tr>
<td>Lip</td>
<td>0.9 × 0.7 cm, dark purple, the base outlined with green lines</td>
<td>0.8 × 0.55 cm, yellow</td>
</tr>
<tr>
<td>Column</td>
<td>purple</td>
<td>yellowish green</td>
</tr>
</tbody>
</table>

*Luisia trichorrhiza var. flava* Gogoi, *var. nov.*

*Luisia trichorrhiza var. flava* is allied to *Luisia trichorrhiza*, but differs in having 9-10 flowered inflorescence with yellowish green flowers.

Typus: India, Assam, Tinsukia district, Daisajan, 118m, 0764, 16.04.2016, Khyanjeet Gogoi [(Holo 0764 A, CAL; Iso 0764 B, DU; Iso 0764 C, TOSEHIM (The Orchid Society of Eastern Himalaya)].

Plant epiphytic, 25-50 cm tall; stem stout, unbranched (occasionally branched), 0.4-0.5 cm wide, covered by leaf sheaths; sheaths 1.2-1.6 cm long, tubular; leaves 13.5-16.5 × 0.45 cm, distichous, fleshy, terete, rugose, jointed; inflorescence opposite to the leaf, stout, short, 9-10-flowered; peduncle attenuate; rachis 0.8-1 × 0.3-0.4 cm; floral bracts 1.5-1.8 × 1-1.5 mm, persistent, broadly ovate-triangular, boat-shaped, acuminate;
flowers 0.8-1.3 cm across, sepals and petals yellowish green, lip yellow, column yellowish green; pedicellate-ovary 1.3 cm long; dorsal sepal 0.5 × 0.3 cm, oblong, obtuse, 3-veined; lateral sepals 0.7 × 0.25 cm, spreading, obliquely ovate to spathulate, acute, keeled, 3-veined; petals 0.7 × 0.18 cm, oblong, obtuse, spreading, 3-veined; lip 3-lobed, 0.8 × 0.55 cm, hypochile deeply concave with erect, rounded to triangular, subacute lateral lobes, epichile cordate, ridged, tapering to subtruncate, minutely emarginated apex; column 0.3 cm long, stout, pollinia 2, 0.12 cm, grooved, ovoid, yellow. Plate 2.
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Flowering: April- May.

Habitat: Epiphyte in tea garden areas, grows on the trunk of Albizia odoratissima (Linnaeus f.) Bentham, Albizia chinensis (Osbeck) Merrill and Adenanthera pavonina Linnaeus (common shade tree of tea garden).

Distribution: Assam (Daisajan), India. (No other plant with similar flowers was located from other places of Assam. So, we can probably regard it as an endemic from the Daisajan of Assam).

References

1 : TOSEHIM, Regional Orchid Germplasm Conservation & Propagation Centre (Assam Circle), Daisa Bordoloi Nagar, Talap, Tinsukia- 786 156, Assam, India
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