Bulbophyllum tseanum (Orchidaceae) a new record for the flora of Viet Nam

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ABSTRACT

Bulbophyllum tseanum found in Quang Nam Province is recorded as new for the orchid flora of Viet Nam. Previously this species was only recorded in Hong Kong and Hainan (South-East China). Living specimens were collected from Quang Nam province and flowered successfully in a private garden in Da Lat city, Lam Dong province. Based on morphological characters, B. tseanum is very close to B. lepidum in plant habit, shape and color scheme of flowers, but can be distinguished by its broadly ovate dorsal sepal, longer lateral sepals, narrow petals with shortly caudate apex, size of stelidia and column wing shape. The description of Vietnamese plants is presented, accompanied with the analytical plate and taxonomic notes.

Keywords

Bulbophyllum lepidum, Bulbophyllum sect. Ephippium, New record, Plant diversity, Plant taxonomy.

1. INTRODUCTION

Bulbophyllum tseanum belongs to Bulbophyllum sect. Ephippium (Blume) Schltr. (Vermeulen, 2015), which presently includes proposed earlier B. sect. Recurvae (Garay, Hammer & Siegerist) J.J.Vermeulen in Vermeulen et al. (2014). This section is characterized by the subumbellate inflorescence, fimbriate dorsal sepal and petals, lateral sepals twisted at base, free on lower margin and connate along the upper margin. In Viet Nam, there have been three newly described species belonging to this section, namely B. layae Aver. & Vuong, B. sridithii Vuong, Aver. & V.S.Dang, and B. xuandangii Aver. & V.S.Dang. (Averyanov et al., 2019; Truong et al., 2020; Nguyen et al., 2022). Previous to our studies B. tseanum was only known to occur in Hong Kong and Hainan in SE China (Chen & Vermeulen, 2009). Morphologically B. tseanum are very close to B. lepidum (Blume) J.J.Sm. in the plant habit, shape, and color of flowers, but can be recognized by its broadly ovate dorsal sepal, longer lateral sepals, narrow petals with short caudate apex, stelidia and column wing shape.

2. MATERIALS AND METHOD

The measurements and plant description are mainly based on living specimens. Studied herbarium voucher specimens and liquid-preserved material (preserved in 70% ethanol) are stored at the VNM Herbarium (The Institute of Tropical Biology, Ho Chi Minh City, Viet Nam) and LE Herbarium (Komarov Botanical Institute, Saint Petersburg, Russia). All photos were taken with a Canon 700D body and Canon EF-S 60 mm f/2.8 Macro USM lens. The terminology for the morphological description follows Beentje (2016).
3. RESULTS AND DISCUSSION

Taxonomic treatment

*Bulbophyllum* section *Ephippium* (Blume) Schltr.


Description. Creeping branches and trunks epiphyte or occasionally lithophyte. Pseudobulbs ovoid to narrowly ovoid, 1.5–2 cm long, 1-leaved, distant on 1–3 cm long on semi-woody, stout, plagiotropic rhizome, covered by brown thin bracts. Leaves shortly petiolate, petiole 3–7 mm long, leaf blade oblong, narrowly obovate, 4–9 cm long, 1.5–2 cm wide, acute. Inflorescence arising from the base of pseudobulb, slender, erect; peduncle 14–15 cm long, dark red, at the base covered by 2 to 3 overlapped tubular bracts, above with 1 tubular bract; rachis 1–2 mm, subumbellate, bearing 6–7 flowers; floral bracts white to purplish, narrowly triangular, 5–6 mm long; pedicel and ovary greenish-yellow to red, 8–9 mm long. Flowers open simultaneously, dorsal sepals and petals yellow, dark red in apical part, lateral sepals yellow, mottled or flushed with purple-red, lip dark red-brown, at apex brownish-yellow. Dorsal sepal broadly ovate, concave, 6–7 mm long, 3–3.5 mm wide, acuminate, fimbriate along the margin. Lip simple, fleshy, ligulate, strongly recurved, 3–3.5 mm long, ca. 2 mm wide, acute, attached to column foot by thin, white ligament; adaxially channeled, with one longitudinal keel extending from the base to apical part; abaxially with 2 low keels. Column ca. 2 mm long, with broadly crescent wing; column foot 4–5 mm long, curved downward, upcurved at apex; stelidia small, acute; stigma rectangular, ca. 1 mm long and wide; anther cap ca. 1 mm long, with round beak at front; pollinia 4, broadly obovate, ca. 1 mm long. Fruits have not been seen.

Habitat and phenology. — Epiphyte on tree trunks and large tree branches, or occasionally lithophytic, in broad-leaved evergreen forests, at elevations about 400 m a.s.l. Flowering in March – April.

**Studied specimens.** VIETNAM, Lam Dong province, 2019, Averyanov et al., 1215.5., cultivated by Ngo Quang Dang in Da Lat (photo, LE 01061345!); — Hue province, 2005, Averyanov et al., HAL 7899 (photo, LE 01073545!); — Hue province, 2005, Averyanov et al., HAL 7163a (photo, LE 01055530!); — Hue province, 2005, Averyanov et al., HAL 8259 (photo, LE 01073546!); — Hue province, 2005, Averyanov et al., HAL 7065 (photo, LE 01073547); — Hue province, 2005, Averyanov et al., HAL 8254 (photo, LE 01055531!); — Hue province, 2005, Averyanov et al., HAL 7163 (photo, LE 01055530!); — Quang Nam province, 2011, Averyanov et al., CPC 3574a (photo, LE 01055516!); — Quang Nam province, 2011, Averyanov et al., CPC 3574 (photo, LE 1055518!); — Quang Nam province, 2022, successfully cultivated and flowering in Da Lat, Lam Dong province, Truong Ba Vuong & Ngo Quang Dang, BV 1374 (VNM); — sine loc., 2011, Averyanov, s.n. (photo, LE 01073551!).

**Note.** — *Bulbophyllum tseanum* resembles *B. lepidium* (Figures 2 & 3 B), but could be distinguished by morphological characters presented on Table 1.
Figure 1. *Bulbophyllum tseanum* (S.Y.Hu & Barretto) Z.H.Tsi.

Figure 2. *Bulbophyllum lepidum* (Blume) J.J.Sm.

A. Flowering plant; B. Leaf apex; C. Inflorescence from above, below and side view; D. Dorsal sepal; E. Lateral sepals; F. Petals; G. Lip; H. Column lip and petals; I. Column; J. Stelidia; K. Stigma; M. Anther cap; N. Pollinia. L. Fruit (A – N photo by Truong Ba Vuong from BV 1272, (L) photo by Dang Minh Quan)
Figure 3. The inflorescences of Bulbophyllum

A. *Bulbophyllum tseanum* (photo from BV 1374). B. *Bulbophyllum lepidum* (photo from BV 1272). All photo by Truong Ba Vuong.

Table 1. Morphological comparison of *Bulbophyllum tseanum* and *B. Lepidum*

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<thead>
<tr>
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<th><em>B. tseanum</em></th>
<th><em>B. lepidum</em></th>
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</thead>
<tbody>
<tr>
<td>Dorsal sepal</td>
<td>Broadly ovate</td>
<td>Narrowly ovate</td>
</tr>
<tr>
<td>Lateral sepals</td>
<td>Narrowly oblong, 3.5–3.7 cm long, 5–6 mm wide</td>
<td>Oblong, 14–15 mm long, 3–4 mm wide</td>
</tr>
<tr>
<td>Petals</td>
<td>Rhombic-ovate, shortly caudate</td>
<td>Narrowly ovate-triangular, attenuate</td>
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<tr>
<td>Column wings</td>
<td>Crescent</td>
<td>Rounded</td>
</tr>
<tr>
<td>Stelidia</td>
<td>Small, but distinct</td>
<td>Hardly visible</td>
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</tbody>
</table>

4. CONCLUSIONS

The discovery of *B. tseanum* increased the diversity of Vietnam Orchid Flora, but its discovery is not surprising given that the floristic composition of both South China and Viet Nam has been mentioned by many previous studies and their disjunct distribution. Despite the recent progress in the investigation of *Bulbophyllum* in Viet Nam, its
account is still far from being completed. Further Orchid explorations in the future will reveal additional information not only for the genus *Bulbophyllum*, but also Orchidaceae.

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