Balanophora subcupularis P. C. Tam (Balanophoraceae): New Record Species for Flora of Vietnam

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Abstract

Balanophora subcupularis P.C.Tam, a new record species from Nui Ba forest (Lam Dong prov., Vietnam), is described, illustrated and compared to some species in the same genus Balanophora, together with a species with similar morphological features. The results were database to identify the species of Balanophora subcupularis P.C.Tam.

Keywords: Balanophora subcupularis; Lam Dong prov.; Morphological features

Introduction

Genus Balanophora is a small genus which belongs to family Balanophoraceae. There were about 19 Balanophora species which mainly distributed in tropical Africa and Australia, temperate to tropical Asia, and the Pacific Islands. In Vietnam, there were records of 6 species of genus Balanophora. Species in genus Balanophora have some biological activities such as radical scavenging activity; inhibit HIV effects, hypoglycemic effects, analgesic effects and anti-inflammatory effects [1-4].

In order to determine the number and distribution of Balanophora species in Lam Dong prov., an investigation was carried out in November 2016. In hill range of Nui Ba mountain (Lac Duong distr. – Lam Dong prov.), wild population of Balanophora subcupularis P.C.Tam was discovered. This was a new record species for Flora of Vietnam. In this paper, the morphologic features of new record species was described and illustrated with pictures and drawing, compared to some species of the same genus with similar morphologic features.

Discussion

Description

Sample of Balanophora species was collected at Nui Ba forest (Lac Duong district, Lam Dong province, Vietnam) in November 2016.

Scientific name

Balanophora subcupularis P.C.Tam (Balanophoraceae)

Morphologic features

Herbs monoecious, yellowish brown rhizome unbranched or in a small mass, branches sub-globose, surface with granular warts and scattered yellow stellate lenticels. Scapes reddish, 3-7 cm. Leaves 5-8, spirally arranged, broadly ovate, apex obtuse. Elliptical inflorescences, 1-2 cm. Male flowers: at basal of androgynous inflorescences, nearly actinomorphic. Pedicel ca. 0.8 mm. Perianth lobes usually 4, widely ovate, apex truncate, less than 1.5 mm. Spadicles subclavate, ½ ellipsoid. Female flowers: yellowish, at basal of spadicles and main axis of inflorescences. Flowers in October to November.

Figure 1: Drawing of Balanophora subcupularis P.C.Tam: 1. Plants; 2. Male flower; 3. Female flowers and spadicle.
Figure 2: Morphologic features of *Balanophora subcupularis* P.C.Tam: 1. Habitat; 2. Flowering plant; 2. Scape with leaves; 4. Andogynous inflorescences; 5. Rhizome surface with granular warts and scattered yellow stellate lenticels; 6,8. Male flowers; 7. Vertical inflorescence; 9. Female flowers and spadicles.

**Distribution and habitat**

The samples of *Balanophora subcupularis* was found in Nui Nui Ba forest which is located in Lac Duong district of Lam Dong province, Vietnam at altitudes of about 1500 m. In the world, this species was found in China (Guangdong, Guangxi, Guizhou, Jiangxi, Hunan, Yunnan), Myanmar and Japan [1-3].

**Conclusion**

**Conservation**

*Balanophora subcupularis* P.C.Tam was monoecious plant with male flowers basally on andogynous inflorescences. This characteristic was similar to some species of the same genus. Table 1 showed the comparison of some monoecious species of genus Balanophora.

<table>
<thead>
<tr>
<th>Features</th>
<th><em>B. subcupularis</em></th>
<th><em>B. fungosa</em></th>
<th><em>B. abbreviata</em></th>
<th><em>B. fargesii</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colour</strong></td>
<td>Yellowish brown rhizome. Scapes reddish</td>
<td>Yellowish brown rhizome. Scapes pink, reddish orange, or occasionally yellowish</td>
<td>Plant creamy white to grayish</td>
<td>Yellowish brown rhizome. Scapes yellow to orange</td>
</tr>
<tr>
<td><strong>Leaves</strong></td>
<td>leaves 5-8, spirally arranged</td>
<td>leaves 15-30, spirally arranged or rarely opposite, imbricate</td>
<td>leaves 4-7, oblong to ovate</td>
<td>connate into a single sheathlike whorl, surrounding middle of scape</td>
</tr>
</tbody>
</table>
Inflorescences | ellipsoid | ellipsoid, ovoid, or conically ovoid | globose to ellipsoid, apex obtuse to rounded | ovoid to subglobose
---|---|---|---|---
Male flowers | nearly actinomorphic | actinomorphic | zygomorphic | -
Perianth lobes of male flowers | usually 4, widely ovate, apex acute or truncate | 4 or 5, ovate-elliptic, apex acute | 4 or 5, imbricate, rounded | 3, broadly deltoid
Female flowers | at basal of spadicles and main axis of inflorescences | at basal of spadicles and main axis of inflorescence | mostly on basal slip of spadicles | only on main axis of inflorescences

**Table 1:** Morphologic features comparison of some species of genus *Balanophora.*

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**References**