Hedychium longipetalum (Zingiberaceae), a new species from Yunnan, China

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Hedychium longipetalum X. Hu & N. Liu sp. nova (Zingiberaceae), from Yunnan Province, China, is described and illustrated. It resembles H. yunnanense, but differs from that species in the number of flowers per bract, in the form of the labellum, and in the length of the petal lobes.

Key words: angiosperms, floristics, Hedychium, new species, taxonomy, Zingiberaceae

The genus Hedychium (Zingiberaceae) was established by J. König in 1783. It is an economically important genus used for cut flowers, with species possessing flowers with a wide range of color and fragrances similar to honeysuckle, jasmine, and sweet-scented osmanthus orchid. Hedychium is mainly distributed in tropical Asia, with some species extending to Australia (Wu 2000). The genus is characterized by flowers with very long (rarely short) filaments, dorsifixated anthers, and usually fragrant flowers. The genus is in need of a comprehensive taxonomic revision. There is currently little consensus on the number of species, with recent estimates varying from about 50 (Wu 2000) to 80 (Sirirugsa & Larsen 1995). A taxonomic division of Hedychium into two subgenera based on bracts imbricate or not was questioned in a molecular study (Wood et al. 2000). Instead, the number of flowers per bract was considered to be a more important character for the division of subgenera (Wood et al. 2000).

Twenty-eight species of Hedychium are recognized in the Flora of China (Wu 2000), of which about 23 are found in Yunnan province (Tong 1999, Wu 2000). During one of three expeditions in Yunnan from 2006 to 2008, we found a plant which looked like Hedychium yunnanense in the understory of Pinus yunnanensis forest, on a hill at an altitude of 1400 m. We noted in the field that it possessed more than two flowers per bract, so we collected its rhizomes for transplantation to our nursery in Guangzhou. When this plant flowered in the nursery in September 2007 and 2008, the number of flowers in each bract was consistently more than two. Based on further morphological studies and literature surveys (Schumann 1904, Gagnepain 1907, Naik & Panigrahi 1961, Larsen 1965, Rao & Verma 1969, Hara et al. 1978, Smith 1991,
Schilling 1982, Siriugsra & Larsen 1995, Wood et al. 2000), we concluded that it represents a new species, which is described below.

Hedychium longipetalum X. Hu & N. Liu, *sp. nova* (Fig. 1)

*H. yunnanensi* Gagnepain affinis, sed floribus in quaque bractea 2–4 (non 1), petalis 4.5 cm non 2.5–3 cm longis quam labello duplo longis, labello elliptico apice integro vel emarginato (non ad medium fissio) differt.

**Holotype:** China. Yunnan Province, Puer county, Nakeli village, 22°41′37″N, 101°13′47″E, alt. 1460 m, 27.IX.2006 Hu Xiu 010 (IBSC, isotype MO). — **Paratype:** China. Guangdong Province, Guangzhou, greenhouse of Zhongkai Agriculture and Engineering university, Hu Xiu 199 (IBSC).

**Etymology:** Because the petals (4–4.5 cm) are nearly twice the length of the labellum (2–2.5 cm), we name this species *Hedychium longipetalum*.

Rhizome tuberous, pseudostems slender, 1–1.5 m. high. Petiole 1–1.5 cm long; ligule oblong, entire, 1.5–2.5 cm long, membranous, pinkish; leaf blade ovate-oblong to oblong, ca. 20–35 × 8–10 cm, glabrous, base attenuate into short petiole, apex caudate. Spikes ca. 10–20 cm long, axis green, pilose; bracts lanceolate, 2–2.5 cm long, 2–4-flowered, margin involute; flowers white, fragrant. Calyx 2.5–3 cm long, apex obtusely 3-toothed, light green; corolla tube 4–4.5 cm long, slender, light yellow; lobes linear, 4–4.5 cm long, nearly twice as long as labellum, light yellow; lateral staminodes oblong-linear, 2.5–3 cm long, 3 mm wide, white; labellum oblong, ca. 2–2.5 × 1–1.1 cm, entire or emarginate, white; filament 3.5–4 cm long, orange; anther
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1–1.2 cm long, orange to yellow; ovary light green, pilose, with two yellow tapering glands at the apex; stigma capitate, light yellow; stylodia filiform. Capsule 1.0–1.5 cm in diam., 3-angled; seeds many; aril red, lacerate. Flowering Sep.–Oct., fruiting Nov.–Dec.

_Hedychium longipetalum_ is similar to _H. yunnanense_ (cf. Gagnepain 1907), but differs in having 2–4 flowers per bract, in the length of the corolla lobes, and in the shape of the labellum apex (Table 1). The number of flowers subtended by each bract, the shape of the labellum apex, and the length of the labellum have been used as important characters to distinguish species in _Hedychium_ by many workers (Naik & Panigrahi 1961, Siriugsa & Larsen 1995, Wu 2000). In a recent study based on molecular evidence, Wood et al. (2000) distinguished subgenera based on the numbers of flowers per bract. Our research using SRAP markers supports Wood’s view (Gao et al. 2008).

**Table 1.** A morphological comparison of _Hedychium longipetalum_ and _H. yunnanense_.

<table>
<thead>
<tr>
<th>Character</th>
<th><em>H. longipetalum</em></th>
<th><em>H. yunnanense</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Color of ligules</td>
<td>pinkish</td>
<td>light green</td>
</tr>
<tr>
<td>Flower number per bract</td>
<td>2–4</td>
<td>1</td>
</tr>
<tr>
<td>Length of lobes (cm)</td>
<td>4–4.5</td>
<td>2.5–3</td>
</tr>
<tr>
<td>Apical shape of labellum apex</td>
<td>apex entire to emarginate</td>
<td>apex bifid to ca. 1/2 its length</td>
</tr>
<tr>
<td>Length of labellum (cm)</td>
<td>2–2.5</td>
<td>2.5–3</td>
</tr>
</tbody>
</table>

Representative specimens examined of _H. yunnanense_.


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References


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