

### 3. **THISMIA** Griffith, Proc. Linn. Soc. London 1: 221. 1845.

水玉杯属 shui yu bei shu

Plants annual, without chlorophyll, mycotrophic; tuberous. Stems simple or branched. Leaves cauline, bractlike, small. Flowers 1–4, terminal. Perianth tube actinomorphic to zygomorphic, cylindric, urceolate, or sometimes campanulate, with prominent annulus at mouth, lateral wings absent; tepals 6, apically distinct; outer tepals as long as or shorter than inner tepals; inner tepals sometimes apically connivent or connate into an erect mitre. Stamens 6, generally laterally connate, pendent from annulus, occasionally distinct; connectives with 0–2 apical and 0–2 basal appendages. Ovary obconic or obovoid, 1-loculed, with 3 parietal placentae; stigmas 3, simple or bilabiate. Fruit fleshy with persistent perianth base; dehiscence by abscission of apex.

About 43 species: pantropical; two species (one endemic) in China.

Phylogenetic relationships within the Dioscoreales remain uncertain: *Thismia* may be sister to *Tacca* J. R. Forster & G. Forster (hence warranting recognition as a distinct family, Thismiaceae), although the Thismiaceae may be paraphyletic (V. Merckx et al., Amer. J. Bot. 93: 1684–1698. 2006; V. Merckx & M. I. Bidartondo, Proc. Roy. Soc., B, 275: 1029–1035. 2008; V. Merckx et al., Cladistics 25: 64–77. 2009).

- 1a. Flowers entirely white; inner tepal appendage 2.8–3.3 cm; outer tepal appendage 5–8 mm ..... 1. *T. taiwanensis*  
1b. Flowers white with yellow annulus and orangish red tepal appendages; inner tepal appendage ca. 1.7 cm; outer tepal appendage absent ..... 2. *T. tentaculata*

**1. *Thismia taiwanensis*** Sheng Z. Yang, R. M. K. Saunders & C. J. Hsu, Syst. Bot. 27: 485. 2002.

台湾水玉杯 tai wan shui yu bei

Plants holomycotrophic. Stems ± absent at anthesis, 1.3–4 cm and carnos in fruit. Leaves scalelike, 3.3–5.5 × 0.4–1 mm. Flowers solitary, subsessile, with 2 or 3 subtending bracts. Perianth tube white, translucent, actinomorphic, urceolate, ca. 9 × 5 mm, circumscissile. Outer tepals ovate, 2.5–3.5 mm excluding appendage, radiating outward; appendage white, erect, subulate, 5–8 mm. Inner tepals spatulate, ca. 5 mm excluding appendage, apically imbricate and forming a loose mitre over perianth chamber; appendage white, erect, subulate, 2.8–3.3 cm. Stamens apparently distinct. Fruit capsule white, translucent, cup-shaped, 3.3–3.7 × ca. 4 mm, apically dehiscent; fruiting peduncle 5–8 cm. Seeds ellipsoid. Fl. and fr. Sep.

• Fagaceae forests; 2000–2100 m. S Taiwan (Gaoxiong).

**2. *Thismia tentaculata*** K. Larsen & Averyanov, Rheedeia 17: 16. 2007.

三丝水玉杯 san si shui yu bei

Plants holomycotrophic. Stems white, unbranched, erect, 2.5–3 cm. Leaves scalelike, 1.5–5.7 × 0.8–1.1 mm. Flowers 1–4, subsessile, with subtending bracts. Perianth tube white, translucent, actinomorphic, urceolate, ca. 7.3 × 4.8 mm, circumscissile. Outer tepals broadly triangular, ca. 1.4 mm, lacking appendage. Inner tepals narrowly triangular, ca. 2.3 mm excluding appendage; appendage orangish red, spreading, filiform, ca. 1.7 cm. Stamens apically connate. Fruit capsule white, translucent, cup-shaped. Seeds ellipsoid. Fl. and fr. Jun–Aug.

Evergreen montane forests; 600–800 m. Hong Kong [Vietnam].

Fl. China 23: 124. 2010.