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Source: *Annales Botanici Fennici*, 49(5):391-394.

Published By: Finnish Zoological and Botanical Publishing Board

DOI: <http://dx.doi.org/10.5735/085.049.0612>

URL: <http://www.bioone.org/doi/full/10.5735/085.049.0612>

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Ancylostemon dimorphosepalus (Gesneriaceae), a new species from China

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Received 12 Dec. 2011, final version received 25 Dec. 2011, accepted 2 Feb. 2012

Chen, W. H., Shui, Y. M., Hua, C. L., Yu, C. Y. & Wen, K. 2012: *Ancylostemon dimorphosepalus* (Gesneriaceae), a new species from China. — *Ann. Bot. Fennici* 49: 391–394.

A new species of Gesneriaceae, *Ancylostemon dimorphosepalus* W.H. Chen & Y.M. Shui, is described and illustrated. It is characterized by its cordate leaves, purple flowers, dimorphous sepals, and small upper lobes of the corolla. Its relationships with the similar species, *Ancylostemon aureus* and *Oreocharis rotundifolia*, are discussed.

The genus *Ancylostemon* (Gesneriaceae), including about 14 species and two varieties, is endemic to China (Wang *et al.* 1990, 1998, Li & Wang 2004, Chen & Shui 2006). The species are distributed in W Hubei, SW and SE Sichuan, NW, NE, and SE Yunnan, E Guizhou, and N Guangxi. Species of *Ancylostemon* mostly grow on moist surface of cliffs and tree trunks in valley forests. The genus is characterized mainly by its emarginate adaxial corolla lips and its dimorphous sepals. However, the systematic relationships among *Ancylostemon*, *Isometrum*, *Paraisometrum* and *Oreocharis* are very obscure (Wang *et al.* 1998, Li & Wang 2004, Möller *et al.* 2009, 2011, Wei *et al.* 2010).

In May 2010, we collected a non-flowering Gesneriaceae specimen with round leaves on trunks of trees in moist forests on the Guanyin Mountain (Yuanyang County, SE Yunnan, China). First, we identified it as *Oreocharis rotundifolia*, an endemic species in SE Yunnan.

In August 2010, we found flowering specimens. Their emarginate adaxial corolla lips and adaxial anthers coherent in pairs indicated that it belonged in the genus *Ancylostemon* (Fig. 1). We compared the specimens with relevant literature reports for China and the neighboring countries (Pellegrin 1930, Li 1991, Pham-Hoang 2000, Li & Wang 2004) and concluded we had an undescribed species at hand. It becomes the second species of *Ancylostemon* occurring south of the Tropic of Cancer; the other one is *A. hekouensis* (Chen & Shui 2006).

Ancylostemon dimorphosepalus

W.H. Chen & Y.M. Shui, *sp. nova* (Fig. 2)

Haec species Ancylostemon aurei (Franch.) Burt similaris, sed foliis rotundatis vel late ovatis (nec ovatis vel ellipticis), margine crenatis (nec dentatis), base cordatis (nec cuneatis), caly-

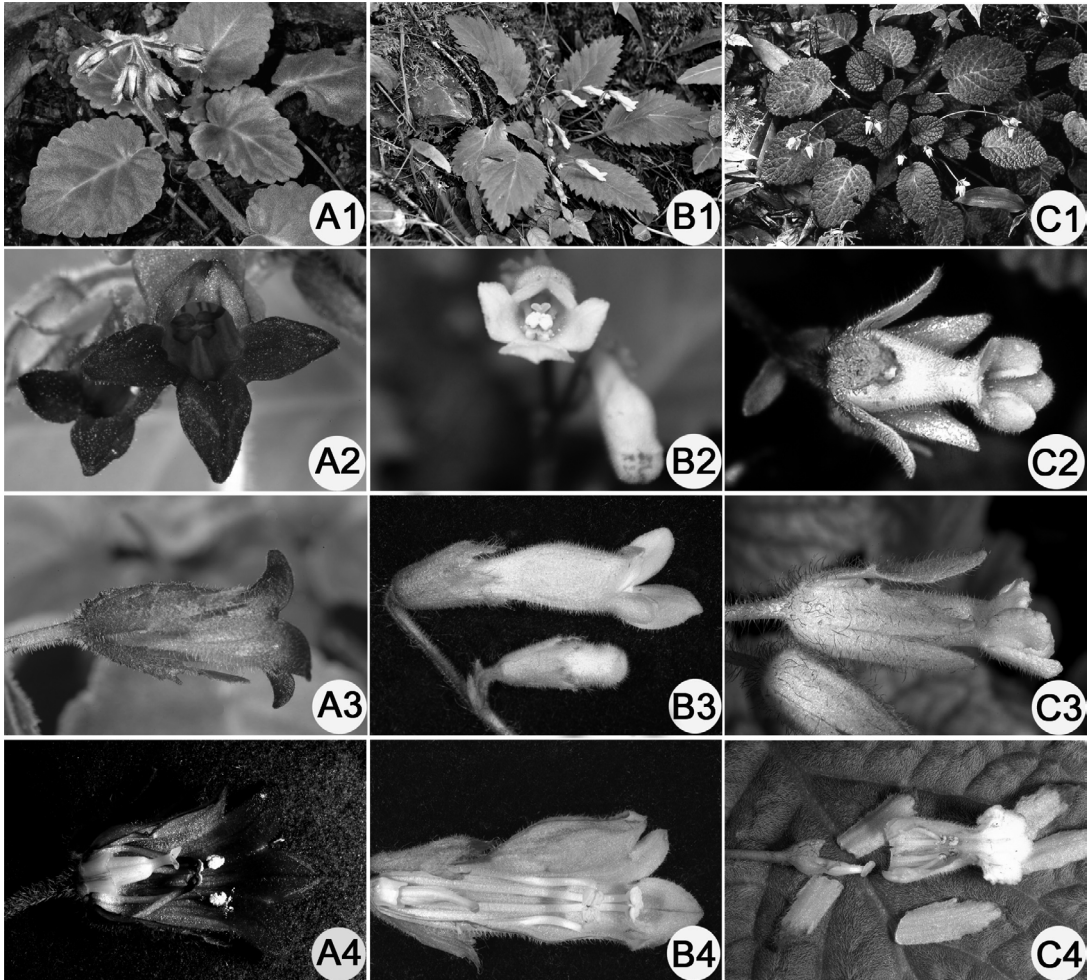


Fig. 1. Comparison among *Ancylostemon dimorphosepalus* (A, from Y. M. Shui et al. 85333, KUN), *A. aureus* (B, from Y. M. Shui et al. B-426, KUN), and *Oreocharis rotundifolia* (C, from Y. M. Shui et al. 92420, KUN). — A1–C1: Plant. — A2–C2: Face view of flower. — A3–C3: Lateral view of flower. — A4–C4: Opened flower. — A and C photographed by Yu-Min Shui, B by Wen-Hong Chen.

cibus ad basi 5-fidis (nec ad medio 5-lobatis), lobis sepalis dimorphis 8–10 mm longis (nec aequalibus 2–2.5 mm long) lobis corollae purpureis (nec flavis) valde differt.

TYPE: China. Yunnan Province, Yuanyang County, Shangxincheng Community, in broad-leaved forests along ravines, 23°03'45"N, 102°56'56"E, 2368 m a.s.l., in flower, 1 August 2010 Y. M. Shui et al. 85333 (holotype KUN; isotype PE). — PARATYPES: China. Yunnan Province, Yuanyang County, Xiaoxinjie Community, in forests on ridge, 2617 m a.s.l., 2010 Y. M. Shui et al. 83766 (KUN); the same county, Shangxincheng Community, in forests of ravine, 2368 m a.s.l., 2010 Y. M. Shui et al. 84436 (KUN); the same county, Ganiang Community, in forests of ravine, 2274 m a.s.l., 2010 Y. M. Shui et al. 85042 (KUN).

Herbs perennial, epiphytic on trunks of trees, stemless. Rhizome ca. 0.4 cm in diam. Leaves numerous, basal; petiole to 4–4.5 cm, sericeous; leaf blade round or broadly ovate, 1.5–6 × 1.3–4.6 cm, adaxially densely sericeous, abaxially slightly sericeous, apex rounded or subacute, base often obliquely cordate, rotund to cordate, margin coarsely crenate; lateral veins 4–5-paired on each side of midrib, conspicuous. Inflorescences axillary, 3–6-flowered cymes. Peduncles 4.5–6 cm, sericeous; bracts lanceolate, 8–9 × 1.5–2.2 mm, pubescent. Calyx lobes 5, divided to base, outside pubescent; sepals dimorphous, adaxial 3, linear, 9–11 × ca. 1.8 mm, entire,

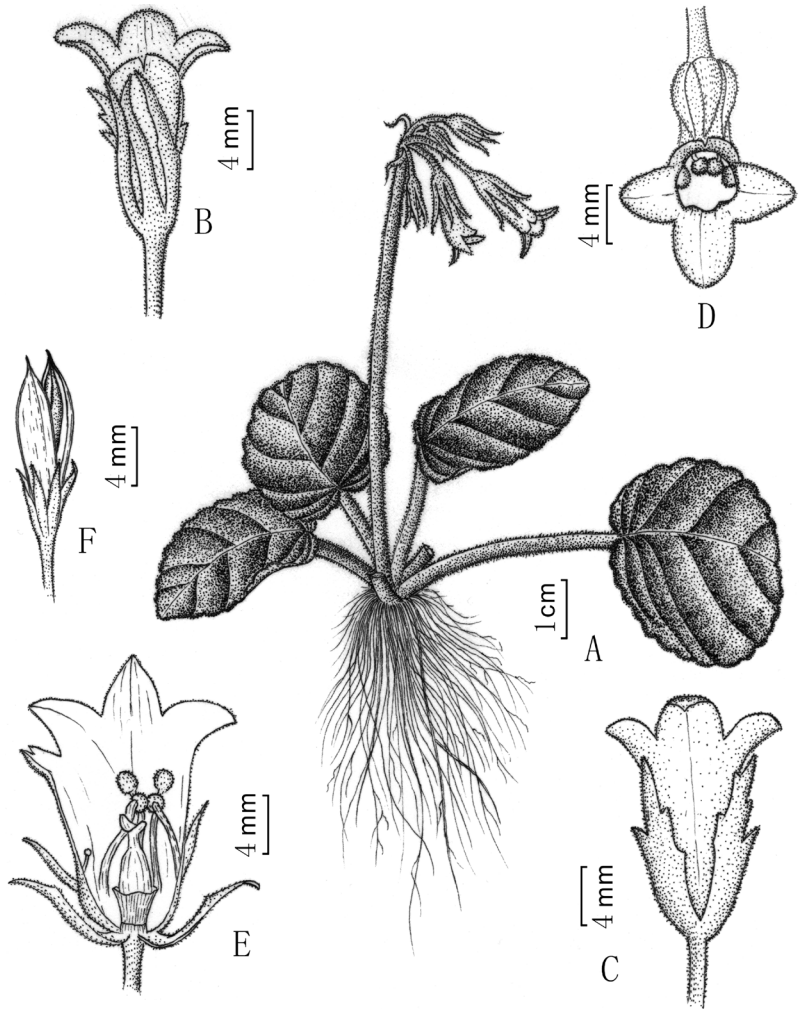


Fig. 2. *Ancylostemon dimorphosepalus* (A–E from the holotype, F from Y. M. Shui et al. 85042, drawn by Kai Wen). — A: Habit. — B: Adaxial view of flower showing adaxial sepals. — C: Abaxial view of flower showing abaxial calyx lobes. — D: Face view of flower showing corolla lobes. — E: Opened flower showing stamens, ovary, stigma, disc and staminode. — F: Capsule with dry calyx lobes.

abaxial 2, oblong-lanceolate, $9\text{--}11 \times 2.5\text{--}3$ mm, dentate. Corolla purple, bilabiate, inside puberulent; tube narrowly funnelform to cylindric, 1–1.1 cm long, 0.4–0.5 cm in diam.; adaxial lip emarginate or slightly 2-lobed, lobes ca. 1×3 mm, triangular; abaxial lip 3-sect, lobes equal, triangular, ca. 3×2.2 mm, apex acute. Stamens 4, included, adaxial stamens ca. 0.8 cm long, adnate to corolla tube ca. 1.5 mm from base, abaxial stamens ca. 1 cm long, adnate to corolla tube ca. 0.2 cm from base; filaments glabrous, 0.7–0.9 cm long; anthers basifixed, adaxial anthers coherent in pairs, abaxial anthers free; anther thecae divergent, not confluent, dehiscing longitudinally; staminode 1, ca. 1.5 mm long, adnate to adaxial side of corolla tube ca. 3.5 mm

from base. Disc ringlike, ca. 2 mm high, margin waved. Ovary narrowly oblong, 1-loculed, glabrous; placentas 2, parietal, 2-divided to base. Stigmas 2-divided. Capsule narrowly oblong, 1.6–3.6 cm long, 0.2–0.35 cm in diam. Seeds narrowly oblong, 0.5–0.6 mm long. Flowering from July to Sep., and fruiting from Oct. to Nov.

Ancylostemon dimorphosepalus grows on the trunks of trees in evergreen broad-leaved forests, alt. 2274–2617 m a.s.l. in Yuanyang County (SE Yunnan). It grows south of the Tropic of Cancer, neighboring the locality of *Ancylostemon hekouensis*.

Ancylostemon dimorphosepalus is similar to *A. aureus* in its smaller upper lobes of corolla and dentate sepals, and also similar to *Oreocha-*

Table 1. Morphological comparison among *Ancylostemon dimorphosepalus*, *A. aureus* and *Oreocharis rotundifolia*.

| Characters | <i>A. dimorphosepalus</i> | <i>A. aureus</i> | <i>O. rotundifolia</i> |
|-------------|--|--|--|
| Leaf | roundish to broadly ovate indumentums sericeous margin crenate base cordate | ovate to elliptic indumentums pubescent margin dentate base cuneiform | roundish to broadly ovate indumentums sericeous margin crenate base cordate |
| Calyx lobes | 5, divided to base slightly shorter than corolla | 5, divided to middle 1/2 shorter than corolla | 5, divided to base slightly shorter than corolla |
| Corolla | purple lobes acute adaxial lip emarginate abaxial lip triangular | yellow lobes acute adaxial lip emarginate abaxial lip triangular | yellowish lobes obtuse adaxial lip 2-lobed abaxial lip elliptic |
| Stigma | 2-lobed | 2-lobed | entire |
| Habitat | epiphytic | lithophytic | lithophytic |

ris rotundifolia in its rotund leaves and cordate leave base, but there are clear differences (Fig. 1 and Table 1). *Ancylostemon aureus* and *Oreocharis rotundifolia* with yellow flowers are lithophytic, while *A. dimorphosepalus*, with purple flowers, grows on the trunks of trees.

In the genus *Isometrum*, the anthers are free and the flowers are purple. In *Ancylostemon*, the adaxial lips are much shorter than abaxial lips, and the adaxial and abaxial anthers are coherent. The apparent close relationships imply that the genera *Ancylostemon*, *Isometrum* and *Oreocharis* may form a complex group, recently regarded as the expanding genus *Oreocharis* (Möller et al. 2011).

Acknowledgments

We thank Mr. Sheng-Hua Yu and his colleagues of Yuanyang Forestry Bureau, and Ms. Zeng-Hua Cao and her colleagues of Yunnan Institute of Forest Inventory and Planning, and Mr. Guo-Feng Li of Kunming Institute of Botany, the Chinese Academy Sciences, for providing help in surveys in Yuanyang County, Yunnan, China. This work was supported by the National Natural Science Foundation of China (grant no. 1131000258) and the Natural Science Foundation of Yunnan Province, China (grant no. 312008CD161).

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