



Didymocarpus heucherifolius var. *yinzhengii* (Gesneriaceae), a new taxon from Hunan, China

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Abstract

Didymocarpus heucherifolius var. *yinzhengii* from Hunan, China, is described and illustrated here. It is most closely related to the more widespread *D. heucherifolius heucherifolius* which shares calyx divided to the base and a number of similar vegetative characters. However, the new taxon is readily distinguished from the latter by the following: larger flowers (corolla up to 4cm long), corolla glabrous outside, puberulent inside at the base and staminodes absent.

Introduction

Didymocarpus Wall. (1819: 378) at present consists of 31 species in China. W.T. Wang examined them and recognized two sections: (1) sect. *Didymocarpus* and (2) sect. *Heteroboaea* W.T. Wang auct. non Benth. (1990:445–446). Section *Heteroboaea* comprises about 11 species including *Didymocarpus dissectus* F. Wen *et al.* (2013:1–5) described recently, endemic to China. It is regarded as a distinct group characterized by a rosulate habit, having a thick rootstock (Weber & Burtt 1998; Burtt 1998). Their inclusion in *Didymocarpus* on grounds of the capitate stigma is not considered justified by other recent workers (Wood 1974; Weber A. and Burtt B. L. 1998). Wood (1974) and Weber *et al.* (2000) argued that they should be transferred to *Chirita* Buch.-Ham. ex D. Don. Unfortunately, *Chirita* was canceled in 2011 (Wang *et al.* 2011. Weber *et al.* 2011). However, until botanists find a proper genus to place them in, they are still temporarily retained in *Didymocarpus* (Wen F. *et al.*, 2013).

Several *Didymocarpus* specimens collected by the first author in Yongxing county were originally identified as *D. heucherifolius* Hand.-Mazz (1936:881) based on calyx divided to the base, more or less orbicular, petiolate leaves, often cordate at the base and coarsely toothed, with subpalmate venation. However, our examination of the material and critical comparison with other *Didymocarpus* species revealed significant differences in floral morphology. We herein describe this taxon as a new variety.

Taxonomic Treatment

Didymocarpus heucherifolius var. *yinzhengii* J.M. Li & S. J. Li, var. nov. (Fig.1 A–E & Fig.2 A–C)

Affinis *D. heucherifolius*, a quo floribus majusculis (ad 4 lin. longis), corollis extus glabris, intus basin pilosis, staminodiis absentibus.

Type:—CHINA. Hunan: near Yongxing county. alt. 300m, 26°17' 10"N, 113°11'25"E, 6 May 2011, *Jia-Mei Li 1105062* (holotype HEAC!); *ibid. Jia-Mei Li 11501* (paratype IBK!).

the photograph of the flower. An adaxial calyx lobe is slightly wider and more symmetrical than the other four in *D. heucherifolius* var. *yinzhengii* (Fig.2.B). In contrast, *D. heucherifolius* var. *heucherifolius* has uniformly sized calyx lobes (Fig.2.E).

The new variety is an allopatric, geographic isolate, disjunct from *D. heucherifolius* in both distance and habitat. *Didymocarpus heucherifolius* var. *yinzhengii* is confined to Danxia region in Hunan province, whereas *D. heucherifolius* var. *heucherifolius* has a broader geographical distribution in southern and eastern China, including five provinces, i.e. Guangdong, Jiangxi, Fujian, Zhejiang and Anhui (Li & Wang 2004).

In addition to field and herbarium studies, we carried out a preliminary internal transcribed spacer (ITS), *trnL-F* and *atpB-rbcL* analysis to determine the new variety species status. Our results show that the new variety belongs to sect. *Heteroboaea* and is closely related to *D. heucherifolius* var. *heucherifolius* and its allies.

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References

- Burtt, B.L. (1998) Taxonomic history of *Didymocarpus* and *Henckelia*. *Beiträge zur Biologie der Pflanzen* 70: 365–375.
- Endlicher, S.L. (1839) *Genera Plantarum*. Vienna: Fr. Beck, pp. 716.
- Handel-Mazzetti, H. (1936) *Gesneriaceae*. *Symbolae Sinicae* 7(4): 881.
<http://dx.doi.org/10.5962/bhl.title.878>
- Li, Z.Y. & Wang, Y.Z. (2004) *Didymocarpus* Wall., in: Li, Z.Y. & Wang, Y.Z. (eds.), *Plants of Gesneriaceae in China*. Henan Science & technology Publish House, Zhengzhou, pp. 283–299.
- Wallich, N. (1918) *Gesneriaceae*. *Edinburgh Philosophical Journal* 1: 378.
- Wang, W.T., Pan, K.Y. & Li, Z.Y. (1990) *Gesneriaceae*, in: Wang, W.T. (ed.), *Flora Reipublicae Popularis Sinicae* Vol. 69. Science Press, Beijing, pp. 420–451.
- Wang, Y.Z. (2011) Phylogenetic reconstruction of *Chirita* and allies (Gesneriaceae) with taxonomic treatments. *Journal of Systematics and Evolution* 49: 50–64.
<http://dx.doi.org/10.1111/j.1759-6831.2010.00113.x>
- Weber, A. & Burtt, B.L. (1998) Remodelling of *Didymocarpus* and associated genera (Gesneriaceae). *Beiträge zur Biologie der Pflanzen* 70: 293–363.
- Wen, F., Qiu, Y.L., Huang, J., Zhao, B. & Wei, Y.G. (2013) *Didymocarpus dissectus* sp. nov. (Gesneriaceae) from Fujian eastern China. *Nordic Journal of Botany* 30: 1–5.