



Identity of *Salvia weihaiensis* (Lamiaceae) from China

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Salvia Linnaeus (1753: 23) (tribe Mentheae, subfamily Nepetoideae) is by far the largest genus of Lamiaceae with approximately 1000 species (Alziar 1988–1993). Molecular phylogeny researches demonstrate that the genus is polyphyletic, and the clade “*Salvia*” in effect includes four distinct lineages, with intercalation of five other genera of tribe Mentheae (Walker *et al.* 2004, Walker & Sytsma 2007, Takano & Okada 2011, Will & Claßen-Bockhoff 2014). East Asia is one of three centers of diversity of *Salvia* with approximately 100 species (Walker *et al.* 2004), 82 species are native to China (Li & Hedge 1994, Hu *et al.* 2014). Additionally, *S. coccinea* Buc’hoz ex Etlinger (1777: 23) and *S. tiliifolia* Vahl (1794: 3), which are native to Central and South America, have naturalized successfully in China (Li & Hedge 1994, Hu *et al.* 2013).

Salvia weihaiensis Wu & Li (1977: 585, Fig. 1) was described based on a single flowering specimen collected in Weihai, Shandong Province (eastern China), and the holotype was deposited in KUN. According to the original description, it is morphologically similar to *S. japonica* Thunberg (1784: 72), but can be easily differentiated from the latter by its simple oblong leaves as well as the exannulate calyx and corolla. After careful comparison of the morphological characters of *S. weihaiensis* with those of *S. japonica*, significant differences also include that *S. weihaiensis* have taproot, broadly ovate-acuminate bract and 3-aristate apex of upper calyx lip (Fig. 1) (*vs. S. japonica* with fibrous root, lanceolate bract and entire upper calyx lip). When conducting a taxonomic revision for Chinese *Salvia*, we found that several specimens of *S. verbenaca* Linnaeus (1753: 25) exchanged from abroad and deposited in KUN and PE were very similar to *S. weihaiensis*. After examining specimens of *S. verbenaca* from P, K, PH, LINN and W, and consulting references relevant to the species (Pobedimova 1954, Hedge 1972, 1982), we did not find any significant differences between the two species (see Table 1). So it is necessary to reduce *S. weihaiensis* to a synonym of *S. verbenaca*.

TABLE 1. Morphological comparisons between *S. verbenaca* and *S. weihaiensis*.

Species	<i>Salvia verbenaca</i> *	<i>Salvia weihaiensis</i> **
Plant height	10–30 (80) cm	Ca. 25 cm
Root	Woody rootstock	Woody rootstock
Leaf	Leaves simple, mostly basal, ovate to oblong-ovate, 2–7(–10) × 1.5–7 cm, margin deeply sinuate to unevenly dentate, petiole 1.2–8 cm long; upper cauline leaves sessile	Leaves simple, mostly basal, oblong, 6.5–7 × 3.2–3.7 cm, margin irregularly undulate-crenate, petiole of basal leaves 2–2.5 cm long; upper cauline leaves sessile
Inflorescence	Inflorescence simple or with one pair, rarely two pairs, of lower branches. Verticillasters 4–8(–10)-flowered	Inflorescence with one pair of lower branches. Verticillasters 4–6-flowered
Bract	Ovate-acuminate, ca. 5–14 × 4–9 mm	Broadly ovate-acuminate, ca. 5 × 4 mm
Calyx	± campanulate, 5–12 mm long, upper lip shortly 3-dentate	tubular-campanulate, ca. 6 mm long, upper lip 3-aristate
Corolla	Lilac to purple, 6–16 mm long, upper lip ± straight-subfalcate	Purple, existing corolla seems to be destroyed, so original description of corolla might be not quite accurate, the upper lip ± straight-subfalcate
Trichome	Stems, branches and calyx pilose or villous, subglabrous on both sides of leaves	Stems, branches and calyx pilose or villous, subglabrous on both sides of leaves

*Refer to Flora of U.S.S.R. (Pobedimova 1954), Flora of Europe (Hedge 1972), Flora of Turkey Hedge (1982), and specimens from P, K, PH, LINN and W, and personal observations provided by one of the reviewers based on individuals from southern Europe.

** Descriptions mainly depend on reexamination for holotype as well as original description.

the curators of KUN and PE for allowing our study of their collections. National Natural Science Foundation of China (grant Nos.: 31370229, 31110103911) and Science and Technology Basic Work (2013FY112100) funded this study.

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