**Buddleja jinsixiaensis** (Scrophulariaceae), a new species from Shaanxi, China

RENBIN ZHU¹, BING KANG², JIMIN CHENG¹³, BAOQUAN ZHANG¹ & XINYU ZHAO³

¹College of Resource and Environment, North West A&F University, Yangling, Shaanxi 712100, P. R. China; e-mail: gyzcjm@ms.iswc.ac.cn
²College of Life Sciences, North West A&F University, Yangling, Shaanxi 712100, P. R. China
³Institute of Soil and Water Conservation, Chinese Academy of Sciences and Ministry of Water resources, Yangling, Shaanxi 712100, P. R. China
*Corresponding author

*Buddleja* Linnaeus (1753: 112) is a medium-sized genus within Scrophulariaceae comprising about 100 species, distributed in tropics and subtropics of America, Africa, and Asia, with 21 species and 5 hybrids known to occur in China (Li & Leeuwenberg 1996, Liu & Peng 2004, 2006).

During a field trip to Jinsixia Grand Canyon, Shangnan County, Shannxi Province, China, in May 11–15, 2013, we found a new *Buddleja* which was morphologically different from any other. We collected specimens again (May 27–28 and June 27–29) and undertook a morphological study. After literature survey (Marquand 1930, Li 1982, 1992, Bao 1983, Northwest Institute of Botany 1983, Li & Leeuwenberg 1996, Liu & Peng 2004, 2006) and examination of many specimens (PE!, WUK!), we concluded that these plants represent a new species.

**Buddleja jinsixiaensis** R.B.Zhu, sp. nov. (Figs. 1–2)

Similar to *B. delavayi*, but leaf blade base rounded to obtuse, inflorescences terminal, corolla tube with long hairs inside and stamens inserted slightly below the middle of corolla tube.

**Type:**—China. Shannxi Provence: Shangnan County, Jinsixia Grand Canyon, Rocky slope in valley, 33°20′24″N, 110°33′5″E, 1253 m, 27 May 2013, R. B. Zhu 0146 (holotype WUK!, isotypes WUK!).

Shrub 1–1.5 m high. Bark of old branches gray, coming off in strips; young twigs subterete, stellate-tomentose, soon glabrescent. Stipules reduced to a transverse line. Leaves opposite; petiole 2–6 mm; leaf blade papery, ovate to very narrowly elliptic, 6–12 × 2–4 cm, both surfaces green and glabrous; base rounded to obtuse, apex acuminate, margin serrate; lateral veins 6–16 per side, depressed on upper surface, conspicuous on lower surface; young leaves stellate-tomentose, soon glabrescent. Inflorescences terminal, slightly drooping, paniculate cymes 10–12 × 2–3 cm, rather lax, each cyme bearing 3–11(–17) flowers; peduncle slightly stellate-tomentose; bracts small and linear, 3–6 mm; bracteoles 2, lanceolate, ca. 1 mm. Calyx campanulate, 2–3 mm, glabrous; lobes 4, ca. 0.5 mm, apex rounded. Corolla blue-purple, corolla mouth white; tube 9–11 × 1.5–2 mm, outside glabrous, inside with long hairs except for base; lobes 4, suborbicular, ca. 3 mm, glabrous; stamens inserted slightly below the middle of corolla tube; stamens subsessile; anthers ovate, ca. 1.5 mm; ovary ovoid, ca. 1 mm, stellate-tomentose; style and stigma ca. 1.2 mm; stigma clavate. Capsule ellipsoid, 5–7 × 2–3 mm, stellate-tomentose. Seeds narrowly elliptic, ca. 2 mm, winged all around.

**Phenology:**—Flowering in May, fruiting in August.

**Distribution and habitat:**—*Buddleja jinsixiaensis* is known only from Jinsixia Grand Canyon (ca. 1200 m a.s.l.), China. A total of two plants only was observed. One was found in *Quercus* forest and the other one on a rocky slope.
**Figure 1.** A. Leaf base. B. Flowering branches. C. Corolla lobes. D. Calyx and corolla tube. E. Inner portion of the corolla tube. F. Capsule. G. Ripened fruit. H. Seeds.

**Taxonomic relationships:—** *Buddleja jinsixiaensis* is morphologically similar to *B. delavayi* Gagnepain (1912: 190) in having lax paniculate cymes. However, *B. delavayi* has leaf blade base cuneate to decurrent, inflorescences terminal and axillary, corolla tube inside with a few scattered glandular hairs, stamens inserted slightly above the middle of corolla tube (Table 1).

**Etymology:—** Named after the type locality, Jinsxia Grand Canyon.

**Other specimen examined (paratype):—** China. Shannxi Province: Shangnan County, Jinsxia Grand Canyon, in *Quercus* forest, 33°20'30"N, 110°33'6"E, 1219 m, 28 June 2013, R. B. Zhu 0156 (WUK!).

**Table 1.** Comparison between *Buddleja jinsixiaensis* and *B. delavayi*.

<table>
<thead>
<tr>
<th>Feature</th>
<th><em>Buddleja jinsixiaensis</em></th>
<th><em>B. delavayi</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant height</td>
<td>1–1.5 m</td>
<td>1–6 m</td>
</tr>
<tr>
<td>Leaf base</td>
<td>rounded to obtuse, lateral veins 6–16 per side</td>
<td>cuneate to decurrent, lateral veins 4–7 per side</td>
</tr>
<tr>
<td>Inflorescence</td>
<td>terminal</td>
<td>terminal and axillary</td>
</tr>
<tr>
<td>Calyx</td>
<td>lobe apex rounded</td>
<td>lobe apex acuminate</td>
</tr>
<tr>
<td>Corolla tube</td>
<td>inside with long hairs</td>
<td>inside with a few scattered glandular hairs</td>
</tr>
<tr>
<td>Stamen</td>
<td>inserted</td>
<td>inserted slightly above the middle of corolla tube</td>
</tr>
<tr>
<td>Ovary</td>
<td>stellate-tomentose</td>
<td>glabrous or stellate-tomentose</td>
</tr>
<tr>
<td>Flowering</td>
<td>May</td>
<td>January to April</td>
</tr>
</tbody>
</table>
BUDDLEJA JINSIXIAENSIS, A NEW SPECIES FROM SHAANXI, CHINA


Acknowledgements

The work was supported by the "Strategic Priority Research Program-Climate Change: Carbon Budget and Related Issues" of the Chinese Academy of Sciences (XDA05050202), by the Project “Spatial scale effect of land use impact on runoff in the Loess Plateau under climate change” supported by NSFC (41230852) and during a floristic investigation for an illustrated handbook of Jinsxia Grand Canyon (201399990309). We thank P.L. Liu, B. Li and A. Chen for language editing; H. Liu, L.F. Sun, Y.B. Yuan and M.H. Cai for help in fieldwork.
References

http://dx.doi.org/10.2307/4107720