



New combinations in Asiatic *Oxybasis* (Amaranthaceae s.l.): evidence from morphological, carpological and molecular data

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Abstract

Two new combinations are proposed in *Oxybasis* (Chenopodioideae, Chenopodiaceae or Amaranthaceae s.l.). *Chenopodium micranthum*, described from Russia in the 1860s and known as *C. urbicum* subsp. *sinicum* in China, is assigned specific rank in *Oxybasis*. It appears to be widespread in China, Mongolia, Kazakhstan and Asiatic Russia. The Siberian-Mongolian *C. gubanovii*, recently described as a new species in *Chenopodium* sect. *Pseudoblitum*, is also assigned to *Oxybasis*. Molecular phylogenetic analysis using maximum likelihood (ML) and maximum parsimony (MP) methods confirmed the placement of *C. micranthum* and *C. gubanovii* in the genus *Oxybasis*. Distribution maps of *O. micrantha* and *O. gubanovii* are provided, the latter species being reported for the first time in the Chinese part of the Altai Mountains. A lectotype for *C. micranthum* (= *O. micrantha*) is designated.

Key words: Chenopodiaceae, *Chenopodium*, China, distribution, Kazakhstan, Mongolia, Russia, taxonomy

Introduction

Recent molecular phylogenetic studies (Kadereit *et al.* 2003, 2010, Fuentes-Bazan *et al.* 2012a) showed that the genus *Chenopodium* Linnaeus (1753: 218) is polyphyletic, and its representatives have been placed in several genera in the tribes Chenopodieae, incl. Atripliceae Duby (1828: 394), Anserineae Dumortier (1827: 20) and Dysphanieae Pax (1889: 92). The taxa earlier included in *Chenopodium* sect. *Pseudoblitum* (Grenier & Godron (1855: 22) Syme (1868: 20) have been reassigned to the genus *Oxybasis* Karelin & Kirilov (1841: 738) [*O. glauca* (Linnaeus (1753: 220) S.Fuentes, Uotila & Borsch, *O. rubra* (Linnaeus (1753: 218) S.Fuentes, Uotila & Borsch, *O. chenopodioides* (Linnaeus (1771: 170) S.Fuentes, Uotila & Borsch, *O. urbica* (L.) S.Fuentes, Uotila & Borsch, and *O. macrospema* (Hooker (1846: 341) S.Fuentes, Uotila & Borsch)]. Mosyakin (2013) divided *Oxybasis* into four sections and added two species. Furthermore, Mosyakin (2013) and Verloove (2013) proposed new combinations for some infraspecific taxa belonging to *O. glauca* and *O. rubra*.

Oxybasis is characterised in having flowers with a hyaline or greenish perianth of 2–4(–5) free or connate segments, a reduced number of stamens (2–4, rarely 5) and usually red seeds with the outer layer (testa) impregnated with tannin-like substances and a diversely oriented seed embryo (see also Fuentes-Bazan *et al.* 2012b, and Sukhorukov & Zhang 2013). However, some members of *Chenopodium* s.l. remain poorly known and their correct placement is still pending. In the present article we transfer two Asiatic taxa, *C. gubanovii*

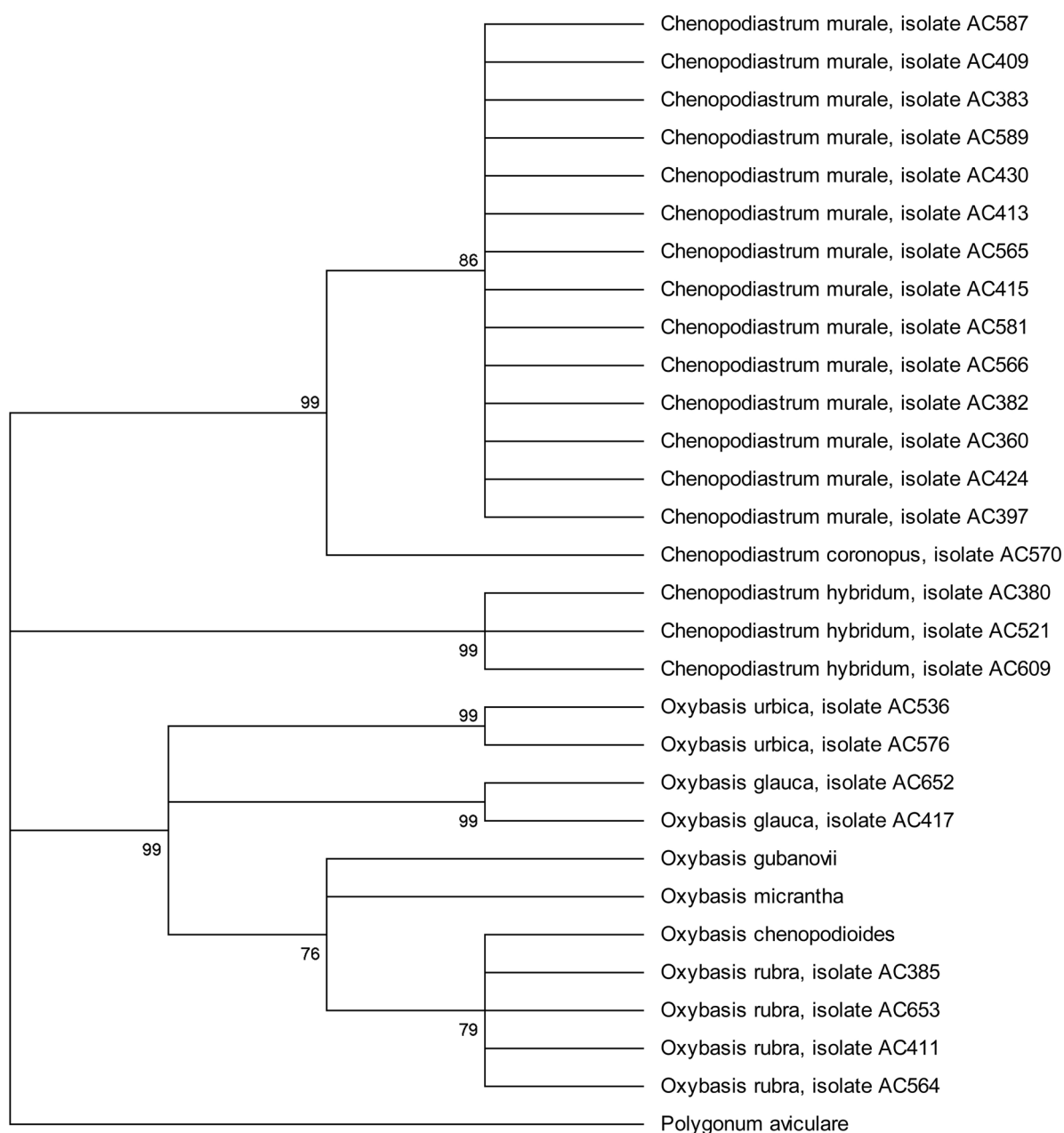


FIGURE 5. ML phylogenetic tree of ITS1 nucleotide sequences from *Oxybasis* sp., *Chenopodium murale*, *C. hybridum* and *C. coronopus*. Bootstrap consensus tree built by Maximum Likelihood method. Bootstrap values higher than 70% are shown.

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