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Revision of three species of *Euonymus* (Celastraceae) from China

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Abstract

Through field observations, recollections at known sites and researches on specimens and literature, full descriptions of *Euonymus wui*, *Euonymus pseudovagans* and *Euonymus mengtzeanus* are provided for the first time. The systematic position of *Euonymus wui* is confirmed to be within sect. *Euonymus* subsect. *Euonymus* ser. *Pseudovyenomi* subser. *Pentameri* and *Euonymus mengtzeanus* is confirmed to be within sect. *Euonymus* subsect. *Euonymus* ser. *Pseudovyenomi* subser. *Pentameri*. Lectotypes for *Euonymus pseudovagans* and *Euonymus mengtzeanus* are here designated. Additionally, the conservation status of the three species is evaluated according to IUCN standards (version 3.1).

Key words: conservation status, endangered, *Euonymus*, lectotypification, taxonomic revision

Introduction

Euonymus Linnaeus (1753: 197) is one of the largest genera of Celastraceae, with about 130 species worldwide (Blakelock 1951, Ma 2001). Five sections are currently recognized based on fruit characters. Ninety five species from all five sections occur in China (Cheng *et al.* 1999, Ma 2001, Ma & Funston 2008). Due to limited field observations, specimens in herbaria and insufficient knowledge of critical morphological characters of flowers and/or fruits, some taxonomic problems remain unresolved. Species in limestone areas in China have especially narrow distributions and are represented by few collections only. Among them, *Euonymus wui* Ma (1997: 97), *E. pseudovagans* Pitard (1912: 871) and *E. mengtzeanus* (Loesener 1902: 455) Sprague (1908: 35) are represented by fewer than 10 sheets in Chinese herbaria, respectively. Incomplete descriptions of either flower or fruit reflect the shortage of the plant collections in China. Through field observations, repeated visits to known sites, and further researches on specimens and literature, full descriptions of floral features of these three species are provided for the first time and their systematic position is confirmed. Additionally, the conservation status of these three species is evaluated according to the current IUCN standards (version 3.1, IUCN 2012).

Taxonomy

Euonymus wui Ma (1997: 97). Fig. 1: A–F.

Type:—**CHINA**. **Yunnan: Malipo** County, Chung-dzia, 1900–2100 m, 2 November 1947, *K. M. Feng 12708* (holotype A 00135244!, isotypes: KUN 0413952!, KUN 0413953!, , PE 00108332!, WUK 00208019!).

Shrubs or small trees, evergreen, to 8 m tall, DBH to 10 cm; twigs quadrangular. Leaves coriaceous; petiole 4–6 mm long; blade elliptic or elliptic-obovate, 4–10 × 2–3 cm, base attenuate, margin nearly entire basally, sparsely crenate apically, apex acute or caudate, 0.8–1.5 cm long, lateral veins 5–7 pairs, reticulate before

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