



Crassula ovata, a new alien plant for mainland China

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Abstract

CRASSULA OVATA, A NEW ALIEN PLANT FOR MAINLAND CHINA.— *Crassula ovata*, the jade plant, is reported for the first time from mainland China. Two small populations have been discovered in the downtown of the city of Chengdu (Sichuan Province, western China).

Key words: alien species; casual; China; *Crassula ovata*; Sichuan.

Resumen

CRASSULA OVATA, UNA NUEVA ESPECIE ALÓCTONA PARA CHINA CONTINENTAL.— Se reporta por primera vez la presencia de *Crassula ovata*, o planta de jade, en China continental. Se han descubierto dos pequeñas poblaciones en el centro de la ciudad de Chengdu (provincia de Sichuan, oeste de China).

Palabras clave: especies alóctonas; *Crassula ovata*; China; Sichuan; subespontánea.

摘要

中国大陆发现一种新的外来物种：翡翠木。— 翡翠木也称之为厚叶景天，中国大陆地区第一次报道了该物种属于外来物种，并在位于中国西部四川省成都市的市区中发现了该物种两个小居群。

关键词：外来物种；常见物种；翡翠木；中国；四川。

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The genus *Crassula* comprises nearly 200 species mainly distributed in southern Africa (its center of distribution), with some species distributed in other parts of Africa or other parts of the world (Jaarsveld, 2003). Perhaps the best known species within the genus is *Crassula ovata* (Mill.) Druce, the jade

plant, which is cultivated everywhere as an ornamental plant. According to Jaarsveld (2003), *Crassula ovata* is native to South Africa (Eastern Cape and KwaZulu-Natal provinces). However, it also occurs in other regions of southern Africa, such as Mozambique and Swaziland, where it is also proba-



Figure 1. Observed populations of *Crassula ovata* from Chengdu (Sichuan, China): left, from Wuhou District (note that there is an individual of *Kalanchoe daigremontiana* on the right); right, from Qingyang District (Photographs: J. López-Pujol).

bly native (Invasive Species Compendium, 2015). It is present in the wild (casual or naturalized) in other territories of Africa (Canary Islands, Madeira), Europe (Spain, Italy), America (California in the United States, Mexico), and Oceania (Hawaii, Australia, New Zealand) (DAISIE, 2015; GBIF, 2015; Invasive Species Compendium, 2015), likely as the result of its use as ornamental; *C. ovata* has been grown beyond its native range as an ornamental (usually under the synonym *Crassula portulacea* Lam.) since the eighteenth century due to its beauty, easy propagation (from stem of leaf cuttings), and beliefs (it brings “good financial luck”; Malan & Notten, 2005). Despite its capability to spread, it is not a serious weed, with no records of significant invasions (Invasive Species Compendium, 2015) except for some areas (e.g. in coastal areas of Valencia, Spain; Ferrer & Donat, 2011).

According to all major regional taxonomic works (*Flora of China*, *Flora Reipublicae Popularis Sinicae*, *Flora of Taiwan*, *Flora of Hong Kong*) not only *Crassula ovata* but the whole genus is absent in China (including Taiwan). Moreover, *C. ovata* is not included in any of the lists or compendiums on alien plants in China published during the last decade (e.g. Wu *et al.*, 2004, 2010a, b; Lin *et al.*, 2007; Weber *et al.*, 2008; Fang & Wan, 2009; Jiang *et al.*, 2011; Xu *et al.*, 2012; Axmacher & Sang, 2013; Yan *et al.*, 2014). Wild occurrences of the jade plant are also not reported in any of the major databases, information systems, and citizen science projects focused on China, including *Global Biodiversity Information Facility* (GBIF; www.gbif.org/), *Chinese*

Virtual Herbarium (CVH; www.cvh.ac.cn), *Taiwan Biodiversity Information Facility* (TaiBIF; www.taibif.tw), *iNaturalist* (www.inaturalist.org), *Chinese Field Herbarium* (CFH; www.cfh.ac.cn), and *Plant Photo Bank of China* (PPBC; www.plantphoto.cn). However, *C. ovata* is included in the *Check List of Hong Kong Plants* (Hong Kong Herbarium, 2004) under one of its synonyms (*Crassula argentea* Thunb.).

In the course of a field investigation in tropical and subtropical areas of China, we observed two populations of *C. ovata* in the city of Chengdu (Sichuan Province, SW China). Thus, these populations apparently represent new records for mainland China. The identification of *C. ovata* is straightforward, as the species is very characteristic even in the absence of flowers (by its jade-green obovate leaves of 3–9 cm long, often with reddish acute margins; Jaarsveld, 2003). Both populations are located in the downtown; one is composed by a small colony of a dozen vegetative individuals on a small roof at a building façade (accompanied by *Kalanchoe daigremontiana* Raym.-Hamet & H. Perrier, also a common invader; Fig. 1) in Wuhou District (near the Sichuan University campus); the second one consisted of just 4–5 vegetative individuals (stems) also on a small roof at a building façade in Qingyang District (near Wenshu Temple; Fig. 1). Since we observed *Crassula ovata* cultivated as a pot plant in several places of Chengdu, these wild populations are likely escapes from private gardens. *Crassula ovata* should be, thus, regarded as casual in China, but paying special attention to its potential for naturalization. We

believe that there is a considerable risk of naturalization, given that the plant is cultivated in many places of China (the PPBC hosts several images of *C. ovata* planted in pots in at least 13 provinces), its ease of propagation (even single leaves can produce roots and grow into new plants; Invasive Species Compendium, 2015), and its tolerance to a wide range of temperature and humidity (even tolerating light frost; Mahr, 2010).

The recording of a new alien species for the Chinese flora such as *C. ovata* is not a rare event and should be included within the process of acceleration of plant invasions that is affecting the country (mainly as consequence of the economic boom; e.g. Ding *et al.*, 2008). The lists of invasive and naturalized plant species have increased several-fold in just two decades (Jiang *et al.*, 2011; Axmacher & Sang, 2013) and such exponential growth is expected to continue in the future (Xu *et al.*, 2012; Kleunen *et al.*, 2015). A large part of the naturalized plant species in China (over 40%) have been introduced intentionally as ornamentals (Wu *et al.*, 2010a), and the latest tendencies in gardening and landscaping in China are clearly biased towards alien species. In Beijing, for example, half of the plant species grown in urban green spaces are of alien origin (Wang *et al.*, 2012), and many invasives were involved in the “greening” of the city for the 2008 Olympic Games (Wang *et al.*, 2011).

Voucher specimens: China, Sichuan: Chengdu, Wuhou District, 30.64° N, 104.08° E, 495 m, on a building façade, growing together with *Kalanchoe daigremontiana*, 27.08.2015, Z.-Q. Wang (SZ-00356563, SZ-00356564); Chengdu, Qingyang District, 30.67° N, 104.07° E, 505 m, on a building façade, 28.05.2015, J. López-Pujol (BC, photo voucher; Fig. 1).

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