Nomenclatural Notes on Alien Invasive Vascular Plants in China (2)

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Abstract: Some literatures recorded on the invasive plants in China are confused. Authors from the different regions in different time treated same species with different scientific names, or different species with same Chinese name, especially in the local reports. All those made it much worse in the study of alien invasive plants in China. This work reports twenty confused species, includes their scientific and Chinese names, synonyms, their origin, distribution in China, and necessary discussions.

Key words: Alien; Invasive plants; Scientific names; Nomenclatural notes; China


Prince-of-Wales Feather (千穗谷), native to North America, is widely cultivated as ornamental, pseudocereal, and fodder crops in many tropical to warm-temperate regions of the world. Occasionally, it occurs as escapes near the places of cultivation. In China, it has been treated as Amaranthus leucocarpus (Hu et al., 2005), and cultivated in Anhui, Hebei, Jilin, Nei Mongol, Sichuan, Xinjiang, and Yunnan.


Brown Mustard (荠菜), a species has greatest diversity in forms occurs in Asia, where it has been widely cultivated as a vegetable and as an oilseed crop. It is cultivated throughout China, sometimes

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naturalized especially in SW China, but was treated as *Brassica juncea* var. *gracilis* (Fan et al., 2008). The species is an allotetraploid derived from hybridization between *B. nigra* (*n* = 8) and *B. rapa* (*n* = 10) (Warwick, 2010). Its origin is still unsure, either from Asia (Wagner et al., 1999), or possibly from Africa, even from the Middle East (Smith, 1981).


Chandelier Plant (洋吊钟), native to Madagascar, introduced to North America, Indian Ocean Islands, Africa, Pacific Islands, and Australia. This prolific species is an aggressive weed in Australia, and it is called “mother of millions” and a serious weed because it is highly poisonous to cattle. In China, it is reported in Anhui (Wang et al., 2007), Guangdong (Zeng et al., 2009), cultivated all over the country, naturalized and spread in some areas (Xie, 2008). The names of *Bryophyllum tubiflorum* and *Kalanchoe tubiflora* are widely used in horticultural as well as botanical works in China, with *K. delagoensis* usually listed in synonymy as a nomen nudum (Moran, 2009).


Chamaecrista (山扁豆), native to tropical America, widely introduced in the tropics and subtropics, is a drought-enduring and barren-resistant plant, grown for improving the soil. The roots are used medicinally for treating dysentery. In most literatures, it’s widely treated as *Cassia mimosoides* (Wang et al., 2004; Yan et al., 2004; Chen, 2005; Ding et al., 2006; Shan et al., 2006; Wei et al., 2006; Wang et al., 2007; Xie et al., 2007; Zhao, 2007; Jiang et al., 2008; Ji et al., 2009; Wang, 2010). It’s distributed in China; Anhui, Beijing, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Hong Kong, Hainan, Heibei, Hunan, Jiangsu, Jiangxi, Macao, Sichuan, Shandong, Taiwan, and Yunnan.


   West Indian Rattlebox (光弯猪屎豆), species native to E Africa, was introduced in Australia, Indonesia, Malaysia, Philippines, Sri Lanka, Vietnam and China; Fujian, Guangdong, Guangxi, Hainan, Hunan, Sichuan, Taiwan and Yunnan. It’s often treated as *Crotalaria zanzibarica*, especially in the Chinese invasive literatures (Xie et al., 2007; Fan et al., 2008).


   Colombian Waxweed (香弯弯纤花), species native to tropical America (Smith, 1985), naturalized in tropics, sometimes abundant weed in gardens, plantations, open fields, along roadsides and forest trails, in open places on ridges and crests, and introduced to China as ornamental, naturalized in Guangdong, but was treated as *Cophea balsamona* (He and Huang, 2004; Zeng et al., 2009).

Marsh Parsley (细叶旱芹), a species native to South America, widely naturalized as a weed in tropical and temperate regions, but treated as Apium leptophyllum (Guo and Li, 1995; Hu et al., 2005; Xie, 2008). It distributed in China: Anhui, Chongqing, Fujian, Guangdong, Guangxi, Hebei, Hubei, Hong Kong, Hainan, Hunan, Jiangsu, Shanghai, Shandong, Taiwan, Yunnan, and Zhejiang. In addition, one literature (Xu et al., 2009) reported Chaerophyllum villosum, possibly because the similar Chinese name; xi ye qin (细叶芹), but this species is native to China, distributed in SW Sichuan, S Xizang, and NW Yunnan, also in Afghanistan, Bhutan, N India, Kashmir, Nepal and Pakistan. Oenanthe sinensis, synonym of Oenanthe linearis subsp. linearis, was also misused to this species (Lin et al., 2007), but it is native to Chongqing, Guizhou, Hubei, Sichuan, Taiwan, Xizang, and Yunnan (Pu and Watson, 2005).


Unbrella Plant (风车草), native to E Africa and SW Asia, is widely cultivated as a water plant in greenhouses and outdoor in warm-temperate or tropical climates. It’s also cultivated as an ornamental in China, sometimes escaped and naturalized along streams and in wet thickets and disturbed areas in Guangdong, Hunan, and Taiwan, but treated as Cyperus alternifolius subsp. flabelliformis (Fan et al., 2008; Zeng et al., 2009).


Siderwisp (羊角菜), a species widely distributed in Bhutan, India, Indonesia, Malaysia, Nepal, Sri Lanka, Thailand, Vietnam, and tropical Africa, introduced in Central, S North, and South America. It’s widely distributed in China from Hainan to Beijing, and from Yunnan to Taiwan (Sun, 1999). This species is often grown as an ornamental and cultivated as a potherb and also used medicinally, but treated as Cleome gynandra (Xie et al., 2007).


Rocketsalad (芝麻菜), widely cultivated in Asia, NW Africa, Europe, and N America, is a naturalized weed worldwide. It’s cultivated in China; Beijing, Gansu, Hebei, Heilongjiang, Jiangsu, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, and Xinjiang, but treated it as Erucia sativa (Liu et al., 2002; Soyolt et al., 2007). It’s widely cultivated in Asia for seed oil, which is used as an illuminant, lubricant, and for pickling; while in Europe and North America as a salad plant. The young plants are medicinal and used as a stimulant, antiscorbutic, stomachic, and diuretic.


Madamfate (马醉草), native to West Indies,
now pan-tropical, wildly introduced and naturalized in tropics and subtropics. It is found in China; Guangdong, Hong Kong, and Taiwan, but treated as *Laurentia longiflora* (Zeng et al., 2009). The sap of plant is an irritant which can be absorbed through the skin, and a small amount of sap in the eyes can cause blindness (Baldwin, 1979).


   Malabar Metastome (野牡丹), native to Cambodia, India, Japan, Laos, Malaysia, Myanmar, Nepal, Philippines, Thailand, Vietnam, and China; Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, SE Zizang, Yunnan, and Zhejiang; but treated as *Melastoma candidum* (An et al., 2007; Zhou, 2011).


   Giant Sensitive Plant (巴西含羞草), a species native to tropical America, introduced throughout the tropics; and cultivated or naturalized in China; Fujian, Guangdong, Hainan, Hong Kong, Taiwan and Yunnan, but treated as *Mimosa invisa* (Yan et al., 2004; An et al., 2007; Fan et al., 2008; Qin et al., 2008; Xie, 2008; Zhang and Xing, 2011). It is a very invasive species wherever introduced (Smith, 2002), on noxious weed list of US and Hawaii as well, and declared as noxious weed in Fiji and Australia (Queensland, Northern Territory, and Western Australia).


   Pink Wood sorrel (红花酢浆草), native to tropical South America, cultivated as an ornamental and naturalized in warm temperate areas in many parts of the world. In China, it is cultivated and also escaped as a common weed of cultivated grounds and open habitats in Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, and Zhejiang. However, it’s also treated as *Oxalis debilis* var. *corymbosa* (Wang et al., 2008, 2009) and *Oxalis martiana* (Chen, 2008).


   Man to Man (草胡椒), native to tropical America, but now widely cultivated and naturalized throughout the tropics. It’s sometimes a weed of cultivation, and found in China: Anhui, Beijing, Fujian, Guangdong, Guangxi, Hainan, Hong Kong, Hunan, Jiangsu, Macao, Taiwan, Yunnan, and Zhejiang, but treated as *Piper pellucidum* (Yan et al., 2004).


   Yellow-flowered Leaf-cup (包果菊), native to Central and North America, is primarily a weed of pastures, hay fields, hedgerows and roadsides in North America, introduced and naturalized in China; Anhui, Jiangsu, Shanghai and Zhejiang, but treated as *Polymnia uvedalia* (Guo and Li, 1995; Chen et al., 2003; Zang et al., 2006).

Jewels of Opal (土人参), a species native to tropical America, cultivated and naturalized throughout SE Asia. It’s cultivated and escapes to shaded wet places in Central and Southern China; Anhui, Chongqing, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hong Kong, Hainan, Hunan, Hebei, Jiangsu, Jiangxi, Macao, Sichuan, Shandong, Shanxi, Yunnan, and Zhejiang. It’s been also treated as *Talinum patens* (Zhao, 2007; Shi et al., 2009). The record of *Talinum portulacifolium* was from Yunnan (Ding et al., 2006; Guan et al., 2006) needs further study.


Cow Soapwort (麦蓝菜), species native to Asia and Europe; but in Chinese literatures, it’s widely treated as *Vaccaria hispanica* (Tang, 1996; Xu and Qiang, 2004; Xie, 2008). It is weed in wheat filed while widely cultivating for medicinal seed in China; Anhui, Gansu, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanghai, Shanxi, Taiwan, Xinjiang, Xizang, and Yunnan.


Rough Cocklebur (苍耳), probably native to the New World, now a cosmopolitan weed (Wagner et al., 1999), common in low elevation, relatively dry, disturbed habitats, distributes all over China, also in Cambodia, India, Japan, Korea, Laos, Mongolia, Russia, Thailand, and Vietnam; SW Asia, N America. *X. italicum* (Liu et al., 2002; Chen et al., 2008; Lin et al., 2009; Yang et al., 2009), *X. mongolicum* (Qu et al., 2010), *X. sibiricum* (Chen, 1979; Wang et al., 2007; Yang et al., 2009, 2011), were treated as synonym of *X. strumarium* in FOC, while the study shows that the fruits, seeds, phyllaries and androeciums of *X. italicum*, *X. mongolicum*, *X. sibiricum* and *X. spinosum* are different from each other, these four species are well separated and should be accepted as different species according to recent study[^1].


Johnsongrass (石茅), thought to have originated in the Mediterranean Region, but is now widely distributed as a serious weed in warm-temperate regions of the world; India, Kazakhstan, Kyrgyzstan, Nepal, Pakistan, Sri Lanka, Tajikistan, Turkmenistan, and Uzbekistan; SW Asia, S Europe. It’s also introduced to China as a weed in fields; Anhui, Fujian, Guangdong, Hainan, Sichuan, Taiwan, and Yunnan. Some authors treated *Sorghum halepense* f. *maticum* as another species with Chinese name; ni

[^1]: 杜珍珍, 徐文斌, 阎平, 王少山. 2011. 新疆苍耳属3种外来入侵新植物[J]. 2011年全国系统与进化植物学暨第十届青年学术研讨会论文集. 云南省植物学会汇编, 121
mang jiao gao liang 匿芒假高粱 (Li et al., 2006; Chen, 2008; Zhang et al., 2009), but it’s only a synonym of *Sorghum halepense* (www.theplantlist.org).

Reference:

An F (安锋), Kan LY (澜丽艳), Xie GS (谢贵水) et al., 2007. Alien invasion plants in Hainan island and central countermeasures [J]. *Journal of Northwest Forestry University* (西北林学院学报), 22 (5): 198—206.


He WQ (何握权), Huang ZL (黄忠良), 2004. Dynamics and impacts of invasion by nonnative plant species to dinhghusan natrue reserve [J]. *Guangdong Forestry Science and Technology* (广东林业科技), 20 (3): 42—45.


Jiang QC (蒋秋才), Lin ZM (林正明), Li L (李丽) et al., 2008. An investigation on the invasive plants in Zhongshan, Guangdong Province [J]. *Guangdong Forestry Science and Technology* (广东林业科技), 24 (2): 54—58.


Qu B (曲波), Zhang W (张徽), Zhai Q (崔强) et al., 2010. Preliminary analysis on invasive species in Liaoqing Province [J]. *Pratacultural Science* (草业科学), 27 (9): 38—44.


Soyolt (苏亚拉图), Jin F (金凤), Khbashagan (哈斯巴根), 2007. A preliminary study on the invasive plants in Inner Mongol.
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Wang FG (王发国), Xing FW (邢福武), Ye HG (叶华谷) et al., 2004. Preliminary study on invasive species in Macau [J]. Acta Scientiarum Naturalium Universitatis Sunyatseni (中山大学学报(自然科学版)), 43 (Suppl.): 106—110

Wang N (王宁), 2010. Study on the invasiveness and colonality of invasive alien plant in Jiangxi province [J]. Journal of Jiangxi Normal University (Natural Science) (井冈山大学学报(自然科学版)), 31 (2); 108—112

Wang W (王伟), Zhang XM (张先敏), Sha LH (沙林华) et al., 2007. Roster of alien invasive perennial species of animals and plants in Hainan island (1) [J]. Chinese Journal of Tropical Agriculture (热带农业科学), 27 (4); 58—64

Wang XF (汪小飞), Cheng YH (程铁宏), Zhao CH (赵昌恒) et al., 2007. Studies on alien plants in Huangshan city [J]. Journal of Jiangsu Forestry Science & Technology (江苏林业科技), 34 (6); 23—27

Wang Z (王忠), Dong SY (董仕勇), Luo YY (罗燕燕) et al., 2008. Invasive plants in Guangzhou, China [J]. Journal of Tropical and Subtropical Botany (热带亚热带植物学报), 16 (1); 29—38


Wei MY (韦美玉), Liu LP (刘丽萍), Wen ZR (文治瑞), 2006. Growth and control of exotic plant in Qiannan area of Guizhou [J]. Guizhou Agricultural Sciences (贵州农业科学), 34 (2); 35—38


Xu L (徐亮), Chen GX (陈功锡), Zhang DG (张代贵) et al., 2009. Investigation on alien invasive plants in Xiangxi of Hunan province, China [J]. Journal of Jishou University (Natural Science Edition) (吉首大学学报(自然科学版)), 30 (1); 98—103

Yan YH (严岳鸿), Xing FW (邢福武), Huang XX (黄向旭) et al., 2004. Exotic plants in Shenzhen, China [J]. Guishai (广东植物), 24 (3); 232—238

Yang JC (杨景成), Wang GM (王光美), Jiang CD (姜国道) et al., 2009. Ecological characters and distribution of invasive plants under the influence of urbanization in Beijing, China [J]. Ecology and Environmental Sciences (生态环境学报), 18 (5); 1857—1862

Yang D (杨德), Liu GH (刘光华), Xiao CM (肖长命) et al., 2011. Identification and control of invasive agricultural plants in Chongqing [J]. Acta Agriculturae Jiangxi (江西农业学报), 23 (3); 93—95

Zhang M (章敏), Qiu XL (邱祥兰), Huang LF (黄立发) et al., 2006. Study on the alien plants in Anhui Province [J]. Journal of Anhui Agricultural Science (安徽农业科学), 34 (20); 5306—5308

Zeng XF (曾宪锋), Lin XD (林晓东), Qiu HY (邱贺媛) et al., 2009. Investigation on alien plants in E. Guangdong [J]. Journal of Fujian Forest Science and Technology (福建林业科技), 36 (2); 174—179, 249


Zhang RJ (张荣京), Xing FW (邢福武), 2011. The composition and origin of alien plants in Ganshiling nature reserve in Hainan, China [J]. Guizhou Agricultural Sciences (贵州农业科学), 39 (7); 31—33

Zhai JM (赵见明), 2007. Study on the main exotic invasive plant species in Ruili, Yunnan [J]. Journal of Southwest Forestry College (西南林学院学报), 27 (1); 20—24