NOTE

A Newly Naturalized Species in Taiwan: *Phytolacca icosandra* L. (Phytolaccaceae)

Szu-I Hsieh[1,5*], Chi-Te Lee[2], Jin-Hua Wu[2], Huan-Yu Lin[3] and Ching-Long Yeh[4]

1. National Taichung Agricultural Senior High School, 283, Taichung Rd., Taichung City, 401, Taiwan.
2. Nantou Forest District Office, Forest Bureau, 456, Shiguan Rd., Caotun Town, Nantou County, 542, Taiwan.
3. Botanical Garden Division, Taiwan Forestry Research Institute, 53, Nanhai Rd., Zhongzheng Dist., Taipei City, 100,Taiwan.
4. Department of Forestry, National Pingtung University of Science and Technology, 1, Shuefu Rd., Neipu, Pingtung, 912, Taiwan.
5. Graduate Institute of Bioresources, National Pingtung University of Science and Technology, 1, Shuefu Rd., Neipu, Pingtung, 912, Taiwan.
** Corresponding author. Email: silyvia0227@gmail.com*

(Manuscript received 23 April 2012; accepted 31 May 2012)

ABSTRACT: *Phytolacca icosandra* L. (Phytolaccaceae), native to the South America has been found recently in central Taiwan. This newly naturalized species is distinguished by its erect spike-like racemes and 12–20 stamens. This paper describes the morphology of the species and provides line drawing and photographs for identification.

KEY WORDS: Phytolaccaceae, *Phytolacca icosandra,* naturalized, Taiwan.

INTRODUCTION

The genus *Phytolacca* L. comprises about 25 species mostly native to South America and widely spread in America, Eurasia, Africa, China, Pacific Islands and Australia (Lu, 2003; Nienaber, 2003). In Flora of Taiwan 2nd edition, only two species have been recorded (Huang and Huang, 1996). During our recent field research, *P. icosandra* L. was found in central Taiwan. This species can be distinguished to the other Taiwanese species by its erect inflorescence, pedicels less than 2 mm, and smooth seed.

The young shoots and leaves of this species are used as a pot herb along the Atlantic coast of Central America. In Guatemala, its green berries are of economic importance as a soap substitute. The juice of the ripe fruits gives a red-purple color that is sometimes used for ink or for coloring various small articles. The roots are known to be poisonous (Standley and Steyermark, 1946). In Indonesia, this species had been reported as a naturalized species (Backer and Bakhuizen van den Brink, 1963).

We considered this species as a naturalized species based on its original distribution and the population survived in abandoned fields and reproduced without human efforts. The newly naturalized species to Taiwan is described and illustrated below.

TAXONOMIC TREATMENTS

Phytolacca icosandra Linnaeus, Syst. Nat. ed. 10. 2: 1040. 1759. 二十蕊商陸 Figs. 1–3

Perennial herbs 1–2 m high, glabrous; stems succulent; leaves elliptic to ovate, 7–20 cm long and 3–10 cm wide, acute or acuminate, attenuate or acuminate at the base, glabrous. Inflorescences spike-like racemes, erect in fruit, 7–16 cm long; pedicel less than 2 mm, bracts subulate; sepals 5 pink to pale reddish, broadly elliptic 3 × 2 mm; stamens 12–20, usually in 2 whorled; carpels mostly 6–10, connate; ovary 6–10 loculed. Berries purple-black, 7–8 mm in diam. Seeds black, thickly lenticular, 2–3 mm long, shiny.

Specimens examined: TAIWAN, Taichung City: Taiping Dist. 24°07'01"N, 120°47'28"E, alt. 230–250 m, 4 April 2012, *S. I. Hsieh 002* (PPI), same loc., *S. I. Hsieh* 003 (TAIF).

Key to species in Taiwan

1a. Inflorescence arching or pendulous; flowers loosely spaced; infructescence pendent ……..…… ***P. americana***
1b. Inflorescence erect; flowers densely spaced; infructescence erect.
2a. Raceme; seeds with concentric striations; pedicel 3–20mm long; stamens 10 ……..…….. ***P. japonica***
2b. Spike-like raceme; seeds smooth; pedicel less than 2mm long; stamens 12–20 ….……..…… ***P. icosandra***

ACKNOWLEDGEMENTS

We are grateful to Ms. Hsiao-Yun Chang and Fang-Ting Liu of National Taichung Agricultural Senior High School for their kind help with the revision of our English writing.

臺灣大學學術期刊資料庫

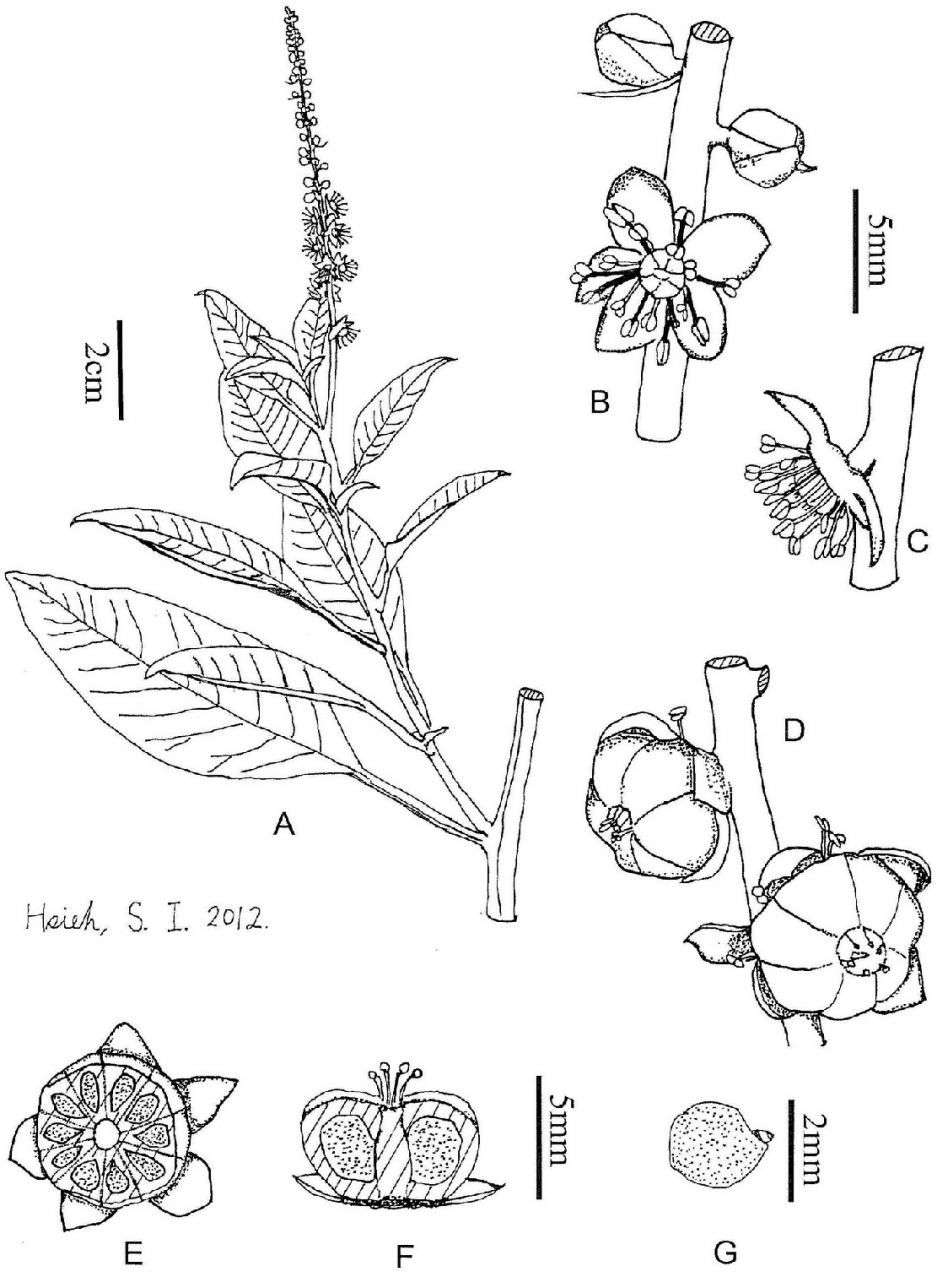


Fig. 1. ***Phytolacca icosandra*** **L. A: Habit. B: Flowers. C: Flower, side view. D: Fruits. E: Cross section of fruit. F: Longitudinal section of fruit. G: Seed. Scale bar: A = 2 cm; B, C, D, E, F = 5 mm; G = 2 mm.**

Anonymous reviewers are acknowledged for giving professional comments and criticism. This study was supported by the Fourth National Forest Resource Inventory from the Forestry Bureau.

LITERATURE CITED

Backer, C. A. and R. C. Bakhuizen van den Brink. 1963. Flora of Java.: 226–228. Noordhoff, Gronigen, the Netherlands.

Huang, S.-F. and T.-C. Huang. 1996. Phytolaccaceae. In : Huang, T. C. *et al*. (eds.）, Flora of Taiwan, 2nd ed. 2: 316–319. Editorial Committee of the Flora of Taiwan, Taipei, Taiwan.

Lu, D.-Q. and L. Kai. 2003. Phytolaccaceae. Flora of China. Wu, Z. *et al*. (eds.), Flora of China, **5**: 435–436.

Nienaber, M. A. and J. W. Thieret. 2003. Phytolaccaceae. In: Flora of North America Editorial Committee (eds.). Fl.

臺灣大學學術期刊資料庫

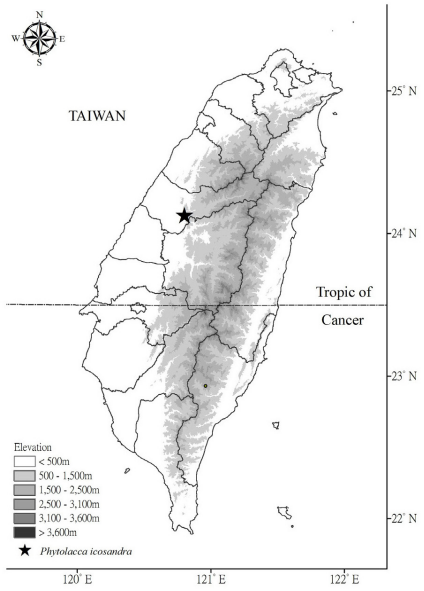


Fig. 2. Distribution of *Phytolacca icosandra* L. in Taiwan.



Fig. 3. Photographs of *Phytolacca icosandra* L. A: Habitat. B:Flowers. C:Fruits.

North Amer. **4**: 3–12. Oxford University Press, New York and Oxford.

Standley, P. C. and J. A. Steyermark. 1946. Phytolaccaceae. Flora of Guatemala. 24: 192–200. Chicago Natural History Museum Press, Chicago, USA.

臺灣新歸化植物：二十蕊商陸（商陸科）

謝思怡[1,5*]、李祈德[2]、吳進華[2]、林奐宇[3]、葉慶龍[4]

1. 國立臺中高級農業職業學校森林科，401 臺中市臺中路 283 號，臺灣。
2. 行政院農業委員會林務局南投林區管理處，542 南投縣草屯鎮史館路 456 號，臺灣。
3. 行政院農業委員會林業試驗所植物園組，100 臺北市南海路 53 號，臺灣。
4. 國立屏東科技大學森林系，912 屏東縣內埔鄉老埤村學府路 1 號，臺灣。
5. 國立屏東科技大學生物資源研究所，912 屏東縣內埔鄉老埤村學府路 1 號，臺灣。

* 通信作者。*Email: silyvia0227@gmail.com*

摘要：二十蕊商陸（*Phytolacca icosandra* L., 新擬中名）（商陸科）原產於南美洲，近期在臺灣中部被發現，為臺灣新歸化植物。具直立的總狀花序及12–20枚雄蕊等為本種辨識特徵。本文提供該種植物的形態描述及手繪圖、彩色照片供鑑定之用。

關鍵詞：商陸科、二十蕊商陸、歸化植物、臺灣。

臺灣大學學術期刊資料庫