

Castanopsis chinensis Hance (Fagaceae), a Newly Recorded Plant in Taiwan

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(Manuscript received 5 December, 2005; accepted 24 January, 2006)

ABSTRACT: *Castanopsis chinensis* Hance is a newly recorded species to be added to the flora of Taiwan. In this paper, a detailed description, a line drawing and color photos of the species are provided.

KEY WORDS: *Castanopsis chinensis*, New record, Flora, Taiwan.

INTRODUCTION

The genus *Castanopsis* (Don) Spach., a member of Fagaceae, is represented by about 120 species in subtropical and warm temperate areas of the world (Wendy, 1994). The species number of *Castanopsis* in Taiwan has been reported by different authors as 8 (Li, 1963; Liu and Liao, 1976; Liao, 1991, 1996), 9 (Chen, 1997; Yang et al., 1997), 10 (Liu, 1960; Liu et al., 1994) and 11 (Shen, 1984).

In September of 2005, we found an unknown species of *Castanopsis* at Machia, Pingtung, which is distinctly different from any other known species of the genus in Taiwan by its leaves being serrate at least along upper half margins. After a detailed study of its cupular morphology and a review of all relevant literature concerning the genus, the authors came to realize that the species may be identical to the species *C. chinensis* Hance which has a distributional range from S. China to Vietnam (Huang et al., 1999). In October, one of us (C.-K. Yang) went to the herbarium of the South China Botanical Garden, Chinese Academy of Sciences (IBSC) for examination of the specimens of the genus. In addition, he made an observation on the plants cultivated in the garden. As a result, all diagnostic characters of the unknown species from Taiwan closely matched those of *C. chinensis* and thus these two should be regarded as conspecific. The species is therefore a new record to the flora of Taiwan. The morphological description for the species is briefly outlined below.

TAXONOMIC TREATMENT

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Castanopsis chinensis Hance, Journ. Linn. Soc. Bot. 10: 201. 1868; Huang, Zhang & Bruce, Fl. China 4: 329. 1999; Huang et al., Fl. Reip. Pop. Sin. 22: 52. 1998. 桂林栲 Figs. 1-3

Evergreen trees 10-20 m tall with trunk straight; branches glabrous, puberulent when young. Leaves lanceolate to rarely ovate, 7-18 cm long, 2.5-4 cm wide, glabrous, thickly chartaceous, concolorous at both surfaces, base rounded to acute, margin serrate at least from middle to apex, apex caudate; midvein and secondary veins adaxially elevated, secondary veins 9-12 pairs; petioles 1-2.5 cm long. Female inflorescences borne on apical part of 1st-year branchlets; female flowers 1 or rarely 2 per cupule. Infructescences 8-15 cm long; cupules globose, 2.5-3.5 cm in diam., usually splitting into 3-5 segments, outside densely grayish brown, inside densely brown villous, wall 1-1.5 mm thick; bracts spinelike, almost entirely covering the outside of cupule, 6-12 mm long, connate at base or lower parts. Nuts compressed globose, 1.2-1.6 cm long, 1-1.3 cm wide, puberulent; scar basal, 8-10 mm in diam.

Specimens examined: TAIWAN. Pingtung: Machia Hsiang, Jhinlishan, alt. 800 m, Sep. 22, 2005, C. K. Yang & F. S. Chou 1340 (SYSU = Herbarium, Department of Biological Sciences, National Sun Yat-sen University); Jhinlishan, December 2005, J. F. Chen s.n. (PPI = Herbarium, Department of Forestry, National Pingtung University of Science and Technology); Baibinshan, alt. 750 m, Nov. 14, 2005, C. K. Yang & F. S. Chou s. n. (SYSU). CHINA. Guangdong: Guangzhou city, Apr. 16, 1963, L. Tang 10142 (IBSC = South China Botanical Garden, Chinese Academy of Sciences); Guangzhou city, Longyandung, Jan. 18, 1934, W. Y. Chen 9346 (IBSC); same loc., Oct. 1, 1929, W. Y. Chen 7620 (IBSC); same loc., K. J. Hou 8417 (IBSC); Boluo hsiang, Oct. 4, 1989, J. H. Li 6427 (IBSC); Boluo hsiang, Luofushan, alt. 245 m, Dec. 25, 1928, Y. Jiang 1740 (IBSC); Jauchung city, Dinghushan, Nov. 6, 1928, Y. Jiang 1522 (IBSC); same loc., Oct. 17, 1929, J. L. Tzuo 21256 (IBSC); Tzengchang hsaing, Nov. 6, 1958, J. F. Wei 122040 (IBSC); Shueishi hsaing, May. 1, 1996, J. H. Li et al 2104 (TNM = Herbarium, Department of Botany, National Museum of Natural Science); Yangchuen

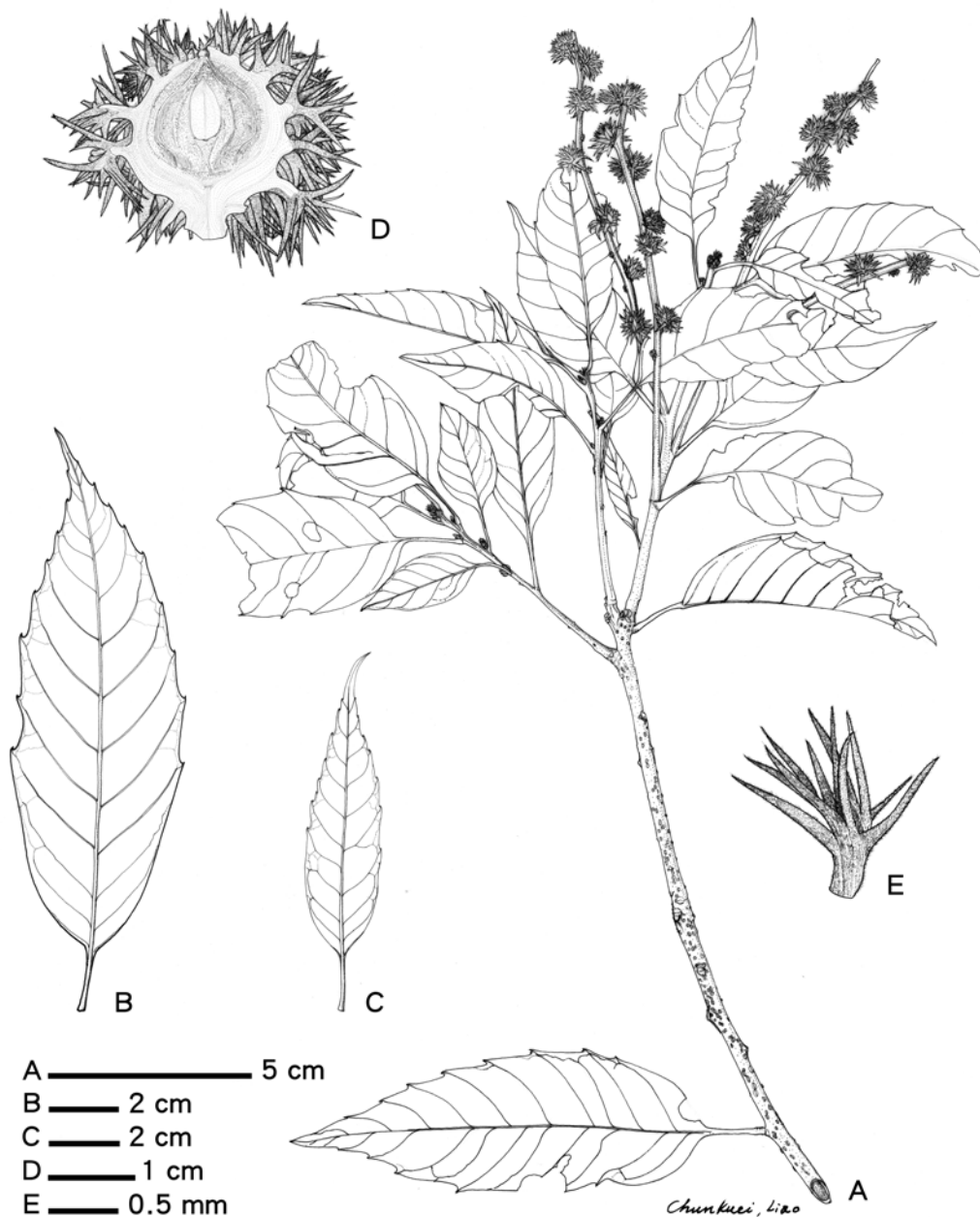


Fig. 1. *Castanopsis chinensis* Hance. A: Branch with fruit. B-C: Leaves. B: At lower branch. C: At upper branch. D: Fruit (vertical section). E: Spines of cupule.

hsaing, alt. 200 m, Nov. 23, 1991, *N. Liu et al.* 3081 (TNM); Guangzhou city, South China Botanical Garden, Oct. 21, 2005, *C. K. Yang & F. W. Xing* 1360 (SYSU = Herbarium, Department of Biological Sciences, National Sun Yat-sen University). Guangxi: Teng hsiang, Dayanshan, alt. 1,200 m, Oct. 9, 1937, *L. C. Chen* 91372 91375 (IBSC).

Note: The species grows on upper slope and ridge with an altitude ranging from 800 m to 1,100 m at Machia, Pingtung.

Phenology: Flowering from May to July; fruiting from September to November.

ACKNOWLEDGEMENTS

The authors gratefully thank Dr. Fu-Wu Xing for assisting collection of South China specimens during this study, and Drs. Dian-Xiang Zhang (IBSC) and Sheng-Zehn Yang (PPI) for providing relevant specimens of the genus *Castanopsis*. We are grateful to anonymous reviewers for providing helpful comments.



Fig. 2. *Castanopsis chinensis* Hance. A: Leaf. B: Upper branch with pistillate flowers. C: Pistillate catkin.

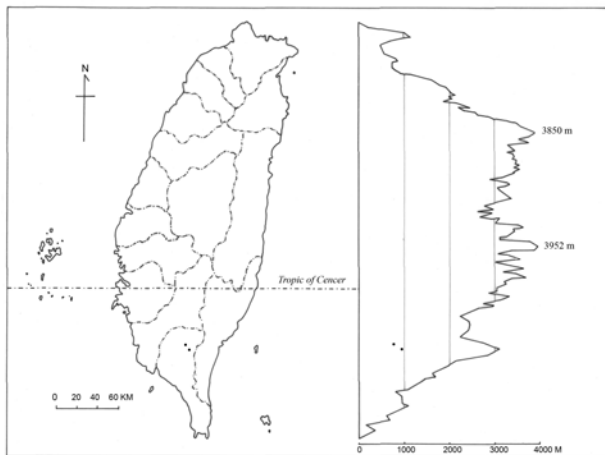


Fig. 3. Distributional map of *Castanopsis chinensis* Hance in Taiwan.

LITERATURE CITED

- Chen, H.-W. 1997. Study of taxonomy and genetic variation of the genus *Castanopsis* (Fagaceae) in Taiwan. M. S. thesis, National Chung-Shing University, Taichung, Taiwan. p. 80.
- Huang, C.-J., Y.-T. Zhang and B. Bruce. 1999. Fagaceae. In: Wu, Z.-Y. and P. H. Raven (eds.), *Flora of China*, Vol. 4: 314-392. Sci. Press, Beijing, and Missouri Botanical Garden Press, St. Louis, USA.
- Li, H.-L. 1963. *Woody Flora of Taiwan*. Livingston Publishing Company, Narberth, Pennsylvania, USA. pp. 85-89.
- Liao, J.-C. 1991. *The Taxonomic Revisions of the Family Fagaceae in Taiwan*. Department of Forestry, National Taiwan University. Taipei, Taiwan. pp. 12-44.
- Liao, J.-C. 1996. Fagaceae. In: Huang, T.-C. et al. (eds.), *Flora of Taiwan*, 2nd ed. 2: 51-123. Editorial Committee, Dept. Bot., NTU, Taipei, Taiwan.
- Liu, T.-S. and J.-C. Liao. 1976. Fagaceae. In: Li, H.-L. et al. (eds.), *Flora of Taiwan* 2: 49-104. Epoch Publ. Co, Taipei, Taiwan.
- Liu, T.-S. 1960. *Illustrations of Native and Introduced Ligneous Plants of Taiwan*. College of Agriculture, National Taiwan University, Taipei, Taiwan. pp. 580-589.
- Liu, Y.-C., F.-Y. Lu and C.-H. Ou. 1994. *Tree of Taiwan*. Monographic Publication No. 7. College of Agriculture, National Chung-Shing University. Epoch, Taichng, Taiwan. pp. 301-318.
- Shen, C.-F. 1984. *Studies on Taxonomy of Taiwan Fagaceae and Pollen Morphology* Master's thesis. Department of Forestry, National Taiwan University, Taipei, Taiwan. pp. 5-19.
- Wendy, B. Z. 1994. *Guide to Flowering Plant Families*. University of North Carolina. Press, Chapel Hill. North Carolina, USA. p. 179.
- Yang, Y.-P., H.-Y. Liu and S.-Y. Lu. 1997. *Manual of Taiwan Vascular Plants* 2: 26-29. The Council of Agriculture, Taipei, Taiwan.

臺灣新紀錄殼斗科植物—桂林栲

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(收稿日期：2005 年 12 月 5 日；接受日期：2006 年 1 月 24 日)

摘 要

桂林栲 (*Castanopsis chinensis* Hance) 為常綠喬木，產於臺灣南部的屏東縣，是臺灣新紀錄的殼斗科植物。本文描述此種植物的形態特徵，並提供線繪圖、地理分布圖與彩色照片以資辨識。

關鍵詞：桂林栲、新紀錄植物、臺灣植物誌。

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