

海菜花(水鳖科)一新变种—嵩明海菜花

蒋柱檀^{1,2}, 李 恒¹, 刀志灵^{1*}

(1. 中国科学院昆明植物研究所, 云南昆明 650204; 2. 中国科学院研究生院, 北京 100039)

摘要: 报道了海菜花—嵩明海菜花(*Ottelia acuminata* var. *songmingensis* Z. T. Jiang, H. Li et Z. L. Dao)。该变种与原变种的区别在于叶片带状厚纸质, 不透明, 叶尖钝圆或具短尖。

关键词: 海菜花属; 嵩明海菜花; 水鳖科; 新变种; 云南; 中国

中图分类号: Q949.71 **文献标识码:** A **文章编号:** 1000-3142(2005)05-0424-02

Ottelia acuminata var. *songmingensis*, a new variety of the Hydrocharitaceae from Yunnan, China

JIANG Zhu-tan^{1,2}, LI Heng¹, DAO Zhi-ling^{1*}

(1. Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650204, China;
2. Graduate School, Academia Sinica, Beijing 100039, China)

Abstract: *Ottelia acuminata* var. *songmingensis* Z. T. Jiang, H. Li et Z. L. Dao, a new variety of the Hydrocharitaceae from Yunnan, China, is described and illustrated. The variety is different from the typical one in having leaves band-shaped thick papery opaque, apex obtuse or mucronulate.

Key words: *Ottelia* Pers.; *Ottelia acuminata* var. *songmingensis* Z. T. Jiang, H. Li et Z. L. Dao; Hydrocharitaceae; new variety; Yunnan; China

1980年9月, 李恒在云南省嵩明县黑龙潭的沟渠中(海拔1 965 m)采集到一种水鳖科(Hydrocharitaceae)植物。该种植物完全沉水, 雌雄异株, 叶片带状厚纸质, 不透明, 长30~80 cm, 宽3~6 cm, 先端钝圆或具短尖, 基部渐狭并下延成翅, 除叶形外与海菜花(*Ottelia acuminata* (Gagnep.) Dandy var. *acuminata*)很相似。因为海菜花叶形随底质营养条件、水体环境和气候等环境因素而变化, 变异巨大, 甚至同一植株的不同年龄阶段叶形也不一样, 所以当时暂定名为海菜花(*O. acuminata* (Gagnep.) Dandy)。其后经多年反复现场观察, 其叶形与海菜

花原变种的叶形一直保持有明显差异; 近年李恒一再提出产于嵩明的这种海菜花应是一个新类群。经作者在中科院昆明植物研究所2年的播种、栽培实验, 将它和海菜花(*O. acuminata* (Gagnep.) Dandy)各变种栽培在同一沟渠, 相同的土壤中, 发现各变种的叶形并不趋同。嵩明海菜花各年龄阶段叶形不变, 在不同营养条件底质、不同水体流速、不同水深的对比实验中, 仍保持带状厚纸质的叶片形态。这一特性与海菜花名下的各变种均不相同, 经反复查对国内外的有关资料, 确定嵩明海菜花为一个新变种。

收稿日期: 2005-06-27 修订日期: 2005-07-28

基金项目: 国家自然科学基金(30170102); 美国国家科学基金(DEB-0103795); 德国技术援助机构资助(GTZ-00·2·47·8-001·02)(Supported by the National Natural Science Foundation of China, Grant No. 30170102; National Science Foundation of USA, DEB-0103795; German Development Cooperation, GTZ-00·2·47·8-001·02)。

作者简介: 蒋柱檀(1980-), 男, 湖南娄底市人, 在读硕士生, 主要从事植物分类与民族学研究。

* 通讯作者(Author for correspondence)

嵩明海菜花 新变种 图 1

Ottelia acuminata (Gagnep.) Dandy var. *songmicensis* Z. T. Jiang, H. Li et Z. L. Dao, var. nov. Fig. 1.

A var. *acuminata* differt lamina vittiformi, crasse, papyracea, opaca, apice obtusa vel mucronata, basi attenuata in petiolum gradatim decurrenti.

China Yunnan(云南): Songming County(嵩明县), Heilongtan Spring(黑龙潭), alt. 1 965 m, in slowly flowing ditches, from 40 cm to 1 m or more deep, 21 Aug. 2003, Z. T. Jiang(蒋柱檀) & Z. L. Dao(刀志灵) 221(♂, holotype, KUN); Z. T. Jiang(蒋柱檀) & Z. L. Dao(刀志灵) 222(♀, paratype, KUN); Sept. 1980, H. Li(李恒) & B. Y. Qiu(邱炳云) 512 (KUN); Songming County(嵩明县), Qinlongtan Spring(青龙潭), alt. 1 515 m, in slowly flowing ditches, from 1.5 m to 3 m or more deep, 7 Aug. 2004, Z. T. Jiang(蒋柱檀) & Z. L. Dao(刀志灵) 236(♀, KUN). Songming County(嵩明县), Shangcunlongtan Spring(上村龙潭), alt. 1 515 m, in slowly flowing ditches, from 50 cm to 1.5 m or

more deep, 8 July 2004, Z. T. Jiang(蒋柱檀) & Z. L. Dao(刀志灵) 240(♂, KUN).

本变种与原变种不同在于叶片带状厚纸质, 不透明, 先端钝圆或具短尖, 基部渐狭, 下延成翅。该变种仅局限于云南省嵩明县的黑龙潭、青龙潭和上村龙潭; 染色体数目 $2n=22$ 。海菜花原变种叶片膜质, 半透明, 形状多变, 由披针形、长椭圆形、狭卵形、广卵形至宽心形, 先端急尖、渐尖, 基部楔形、圆形、心形至深心形; 分布于广西西部、四川西南部、贵州和云南的大部分地区; 染色体 $2n=22$ 。

嵩明海菜花与波叶海菜花(*O. acuminata* var. *crispa* (Hand.-Mazz.) H. Li)的叶片都呈长带状较为相似, 但嵩明海菜花叶片边缘全缘或略具波状褶皱, 叶脉、佛焰苞、花梗、萼片背面中脉上无疣刺及疣凸, 仅果棱上有疣凸; 而波叶海菜花叶缘显著呈波状反转, 叶脉、佛焰苞、花梗、萼片、中脉背面、果棱上有疣刺或疣凸, 两变种易于区分。此外, 波叶海菜花仅局限于云南省宁南县的泸沽湖, 其染色体 $2n=20$, 也显然与嵩明海菜花不同。

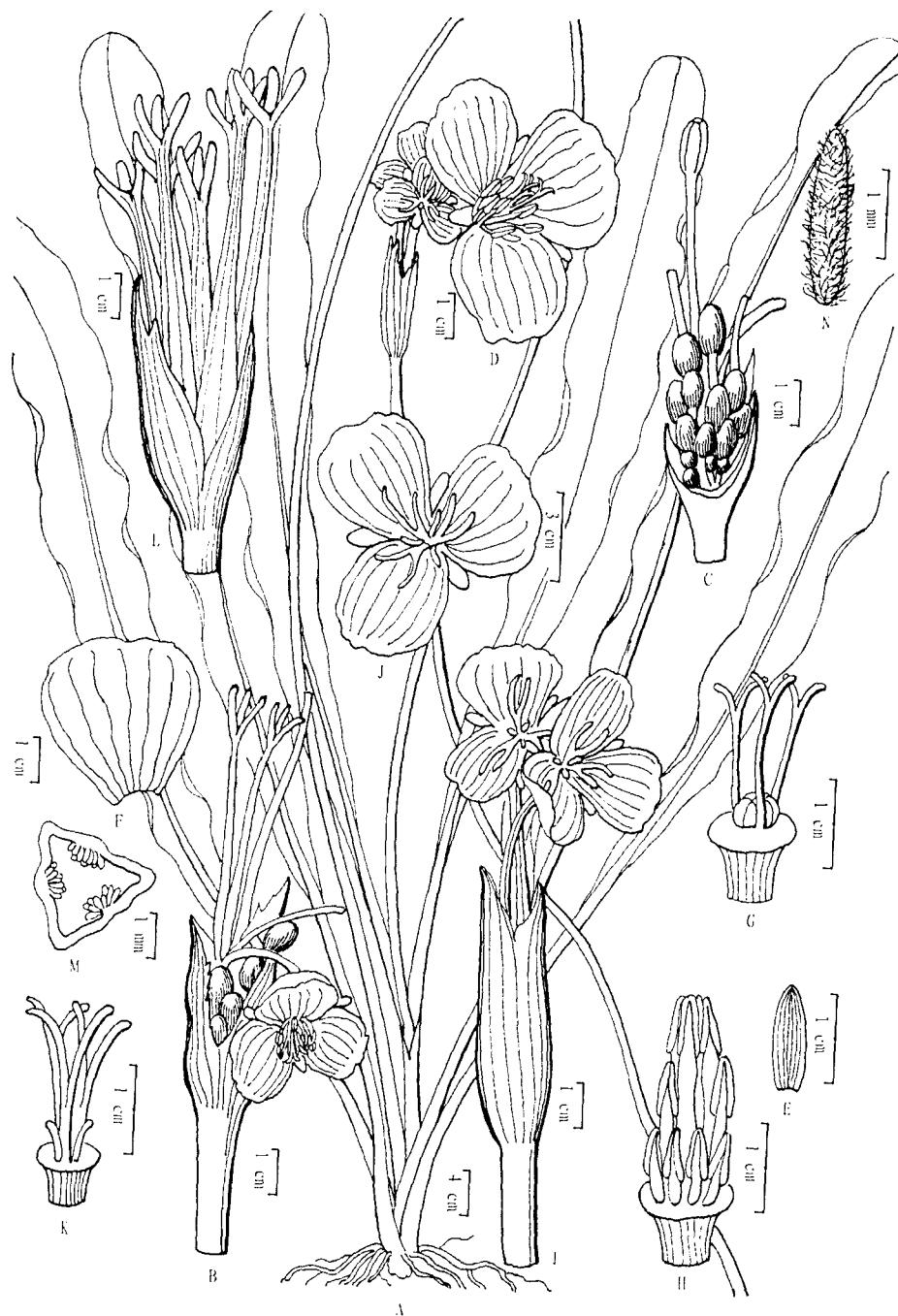
(上接第 423 页 Continue from page 423)

- cing belowground herb ivory and infection[J]. *Forest Ecology and Management*, **177**: 145—153.
- Runkle JR. 1981. Gap regeneration in some old-growth forests of the eastern United States[J]. *Ecology*, **62**: 1 041—1 051.
- Runkle JR. 1990. Gap dynamics in an Ohio *Acer-Fagus* forest and speculations on the geography of disturbance[J]. *Forest Research*, **20**: 632—641.
- Shugart HH. 1984. A theory of forest dynamics[M]. New York: Springer-Verlag.
- Spies TA, Franklin JF. 1989. Gap characteristics and vegetation response in coniferous forest of the pacific northwest [J]. *Ecology*, **70**: 543—545.
- Takuya K, Yoh I, Naoki F. 1996. Forest spatial dynamics with expansion total gap area and gap size distribution[J]. *Journal of Theoretical Biology*, **180**: 229—246.
- Uhl CK, Clark ND, Maquino P. 1988. Vegetation dynamics in Amazonian tree fall gaps[J]. *Ecology*, **69**: 751—763.
- Watt AS. 1947. Pattern and process in the plant community [J]. *Ecology*, **35**: 1—22.
- Whitmore TC. 1989. Changes over twenty one years in the Kolombangara rain forests[J]. *Journal of Ecology*, **77**: 469—483.
- Whittaker RH. 1979. Classifying species according to their demographic strategy[J]. *American Naturalist*, **113**: 185—200.
- William P, Todd SF, Licona JC. 2003. Natural regeneration of timber species in logging gaps in two Bolivian tropical forests [J]. *Forest Ecology and Management*, **181**: 313—322.
- Zang RG(臧润国), Xu HC(徐化成). 1998a. Advances in forest gap disturbance research(林隙干扰研究进展)[J]. *Sci Silv Sin*(林业科学), **34**(1): 90—98.
- Zang RG(臧润国), Liu T(刘涛), Guo ZL(郭忠凌), et al. 1998b. Gap disturbance regime in a broad leaved-korean pine forest in the Changbai Mountain Natural Reserve(长白山自然保护区阔叶红松林林隙干扰状况的研究)[J]. *Acta Phytocol Sin*(植物生态学报), **22**(2): 135—142.
- Zang RG(臧润国), Guo ZL(郭忠凌), Gao WT(高文韬). 1998c. Gap regeneration in a broad-leaved Korean pine forest in Changbai Mountain Natural Reserve(长白山自然保护区阔叶红松林林隙更新的研究)[J]. *Chin J Appl Ecol*(应用生态学报), **9**(4): 349—353.

蒋柱檀, 等: 海菜花(水鳖科)一新变种—嵩明海菜花

JIANG Zhu-tan, et al. : *Ottelia acuminata* var. *songmingensis*, a new variety
of the Hydrocharitaceae from Yunnan, China

图版 I
Plate I



A. 花株; B. 雄花序; C. 去佛焰苞雄花序; D. 雄花; E. 萼片; F. 花瓣; G. 退化雌蕊和附属体(雄花); H. 雄蕊群;
I. 雌花序; J. 雌花; K. 雌花中的柱头、花柱和退化雄蕊; L. 果序; M. 子房横切面; N. 种子。

王凌根据蒋柱檀, 刀志灵 221(模式), 222(等模式)绘。
A. flowering plant; B. inflorescence ♂; C. inflorescence ♂, spathe removed; D. flower ♂; E. sepal; F. petal; G.
pistilloides and appendix(flower ♂); H. fertile stamens; I. inflorescence ♀; J. flower ♀; K. stigmata, styles
and staminodes in flower ♀; L. fruiting inflorescence; M. cross-section of ovary; N. seed. Drawn by L.
Wang based on Z. T. Jiang, Z. L. Dao 221(Holotype), 222(Paratype).