- [18] NIU S H, LI Z X, YUAN H W, et al. Transcriptome characterisation of *Pinus tabuli formis* and evolution of genes in the Pinus phylogeny[J]. *BMC Genomics*, 2013,14:263.
- [19] 张运城,周长虹,钮世辉,等. 针叶树 GID1 同源基因分离鉴定与功能预测[J]. 北京林业大学学报,2015,37(5): 40-48.

 ZHANG Y C, ZHOU C H, NIU S H, et al. GID1 orthologous gene in conifers and its function prediction[J]. Journal of Beijing Forestry University, 2015,37(5): 40-48.
- [20] EDGAR R C. MUSCLE: a multiple sequence alignment method with reduced time and space complexity[J]. BMC Bioin formatics, 2004.5:113.
- [21] EDGAR R C. MUSCLE: multiple sequence alignment with high accuracy and high throughput[J]. *Nucleic Acids Res.*, 2004, 32(5):1792-1797.

- [22] HOLSTERS M, WAELE D D, DEPICKER A, et al. Transfection and transformation of Agrobacterium tume faciens
 [J]. Molecular & General Genetics, 1978, 163(2):181-187.
- [23] DAVIÈRE J M, ACHARD P. Gibberellin signaling in plants [J]. Development, 2013,140(6):1 147-1 151.
- [24] WANG Y, DENG D. Molecular basis and evolutionary pattern of GA-GID1-DELLA regulatory module[J]. *Molecular Genetics & Genomics Mgg.*, 2014, **289**(1);1-9.
- [25] GAO X H, HUANG X Z, XIAO S L, et al. Evolutionarily conserved DELLA-mediated Gibberellin Signaling in plants
 [J]. Journal of Integrative Plant Biology, 2008, 50(7): 825-834.

(编辑:宋亚珍)

封面植物介绍——帽蕊草

帽蕊草($Mitrastemon\ yamamotoi$),隶属于帽蕊草科帽蕊草属。草本,高 $3\sim8\ cm$,寄生于栎属(Quercus) 或锥属(Castanopsis)植物的根上;无叶片,花序的苞片鳞片状;花单生,花被片杯状,雄蕊帽状,套住雌蕊。花期 $8-9\$ 月,果期 $10\$ 月。

全世界有 2 种帽蕊草属植物,中国有 1 种和 1 变种,其中原变种产中国福建、广东、广西和云南,柬埔寨、日本和印度尼西亚亦有分布。变种多鳞帽蕊草(M. yamamotoi var. kanehirai)仅分布于中国台湾省,在当地被叫做"奴草"。帽蕊草属的系统位置一直是个迷,传统的分类系统认为它与大花草属(Rafflesia)关系比较近,将他们放同一科中或同一目中。但是分子证据表明他们关系非常远,大花草属归在金虎尾目(Malpighiales),而帽蕊草属在杜鹃花目(Ericales)。

(图文由中国科学院西双版纳热带植物园 朱仁斌博士提供)

Introduction to Cover Illustration: Mitrastemon yamamotoi

Mitrastemon yamamotoi belongs to the family Mitrastemonaceae. Herb, 3-8 cm tall, parasitic on roots of Castanopsis and Quercus. Without leaves, inflorescence bracts scale-like. Flowers solitary, Perianth copular, Stamens connectives forming a depressed-conic cover over stigma. Flowering in August to September, fuiting in October.

There are two species on the world, one species and a variety in China. M. yamamotoi var. yamamotoi distributed in Fujian, Guangdong, Guangxi and Yunnan, China, also in Cambodia, Indonesia, Japan, Malaysia and Thailand. M. yamamotoi var. kanehirai is endemic to Taiwan Province, China. The position of Mitrastemon has been a mystery. In traditional classification systems, Mitrastemon has a close relationship with Rafflesia, they are put in same family or same order. But molecular evidence shows that their genetic relationship is very far, the former is in Malpighiales, and the latter is in Ericales.