

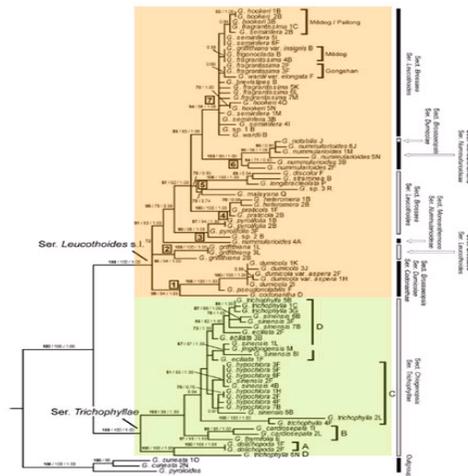
中国-喜马拉雅地区植物进化策略研究取得重要进展

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白珠树属 (*Gaultheria* L.) 隶属于杜鹃花科越桔亚科的白珠树族, 120余种, 环太平洋分布。该属具有较高的经济价值, 可用于观赏、工艺木材、食品、医药工业和日用品。该属约40%的种类分布在中国-喜马拉雅地区, 在生境、习性及其形态上较环太平洋其它地区的种类更加丰富多样。

为了探究中国-喜马拉雅白珠树属植物的物种多样性成因, 近期, 由中国科学院昆明植物研究所李德铎研究员带领的课题组, 在国家重点基础研究发展计划 (973) 项目“中国-喜马拉雅地区生物多样性演变与保护研究”的支持下, 对分布在中国-喜马拉雅地区的白珠树属植物进行了分子系统发育研究。结果发现, 这个类群分为两个支持率较高的单系群, 即大叶类群 (ser. *Leucothoides* s.l.) 和小叶类群 (ser. *Trichophyllae*)。这两个单系群在生境适应和形态特征上朝着两个不同的方向演化, 并采取了不同的进化策略。大叶类群生长在亚热带到亚高山丛林中, 叶片长度大于1厘米 (通常3至12厘米), 总状花序腋生, 而小叶类群一般生长在高山草甸或灌木林中, 叶片长度小于1厘米 (通常3至8毫米), 单花花序腋生。杂交物种形成在低海拔大叶类群的演化中起到了关键作用, 而在高海拔小叶类群中并没有发现网状进化的介入, 该分支存在的许多隐种可能是生境趋同适应的结果。中国-喜马拉雅地区气候和生境的异质性, 可能促进了白珠树属植物的快速辐射进化, 并促成了该类群高度的物种多样性。本研究为阐释中国-喜马拉雅地区的物种形成与适应性进化模式的研究积累了必要素材, 也为揭示整个白珠树族和杜鹃花科的系统进化, 环太平洋洲际间断分布乃至全球的生物分布格局成因提供了新的线索。

该项目研究成果已在2010年出版的Molecular Phylogenetics and Evolution期刊上发表。



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Reticulate evolution, cryptic species, and character convergence in the core East Asian clade of *Gaultheria* (Ericaceae)

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ABSTRACT

Phylogenetic relationships of 84 *Gaultheria* representing 59 species in the core East Asian clade of the well-supported group of *Gaultheria* (Phlegmaria) Ericaceae. *Gaultheria* were examined with sequence and combined DNA sequence data from the genes *rbcL*, *trnK*, *trnL*, *trnS*, *trnT*, and *trnD*. The results show that the core East Asian clade of *Gaultheria* is highly reticulate, with many species showing evidence of hybridization. The results also indicate that the species of the core East Asian clade of *Gaultheria* are highly reticulate, with many species showing evidence of hybridization. The results also indicate that the species of the core East Asian clade of *Gaultheria* are highly reticulate, with many species showing evidence of hybridization.

1. Introduction

The subgenus group of the well-supported Phlegmaria (Phlegmaria) Ericaceae comprises the genera *Diphysa* (Horn), *Gaultheria* (L.), and *Speyeria* (L.) (Fritsch and Chu, 2011; Chu et al., 2012). Most species of the group are widely distributed in the temperate and subtropical regions of the world, with some species occurring in the tropics. The group is highly diverse, with many species showing evidence of hybridization. The results also indicate that the species of the core East Asian clade of *Gaultheria* are highly reticulate, with many species showing evidence of hybridization.

Classification of *Gaultheria*

Approximately 1000 species of the ca. 120 species of *Gaultheria* are recognized in the core East Asian clade of *Gaultheria* (Phlegmaria) Ericaceae. The results also indicate that the species of the core East Asian clade of *Gaultheria* are highly reticulate, with many species showing evidence of hybridization. The results also indicate that the species of the core East Asian clade of *Gaultheria* are highly reticulate, with many species showing evidence of hybridization.

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