

**A207** Analysis of Genetic Relationships in the Genus  
*Antithamnion* (Ceramiales, Rhodophyta) Using RAPD-PCR

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Phylogenetic relationships in six antithamnioid species, *A. densum*, *A. sparsum*, *A. defectum*, *A. nipponicum*, *A. aglandum* and *A. callocladus* were examined using Random Amplified Polymorphic DNA (RAPD) method. The chromosome number of each species was counted and crossing experiments were attempted. Each species is isolated reproductively and has different chromosome number. In morphology, branching patterns, position of tetrasporangia and existence of gland cell were examined. As a result of application 30 arbitrary primer, a total of 197 polymorphic RAPD markers amplified from 10 different primers. *A. glanduliferum* was used as an outgroup. Results suggest that *A. nipponicum* and *A. callocladus* are closely related. *A. aglandum* which is very similar to *A. nipponicum* in morphology is relatively isolated with above two species. *A. densum*, *A. defectum* and *A. sparsum* were very closely related species. The results from chromosome study and RAPD implies that *A. sparsum* might be resulted from polyploidization of *A. defectum*.

**A208** The reproductive system of the Korean endemic taxon,  
*Abeliophyllum distichum* Nakai, a distylous species (Oleaceae)

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Heterostyly is clearly confirmed in the Korean endemic, monotypic genus *Abeliophyllum* Nakai (*A. distichum* Nakai). Variation in style and anther position and floral morphology of *A. distichum* were studied in two populations in Korea (Yulji-Ri of Chungbuk province, and Hongreung Arboretum of Seoul). It is revealed that the difference between the most floral characters (e.g., styles, stamens) of pin (long-styled) flowers and thrum (short-styled) flowers is highly significant ( $P < 0.0001$ ), except the petal size which is not significantly different, however. Dimorphism of pollen size in relation to distyly is generally well correlated and significantly different (for Yulji-Ri population,  $P < 0.001$ ) and greater differences (for Hongreung population,  $P < 0.0001$ ). While the exine ornamentation (especially lumina size) is only shown some differences ( $P < 0.05$ ) between pin and thrum. It is noteworthy that some stomata-form nectaries are found on the below portions of petal in thrum flowers, on the contrary, this structure is usually absent or extremely rare in pin flowers. Additionally, on the basis of the preliminary data (e.g., differences of the fruit productivity between two morphs), the conservational strategy for *A. distichum* in the protected areas is also briefly discussed.