

Eocene *Podocarpium* (Leguminosae) from Hainan Island of South China and its phytogeographic implications

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The previous fossil records indicate that the extinct genus *Podocarpium* A. Braun ex Stizenberger 1851 of the Leguminosae was extensively distributed in Eurasian sediments from Early Oligocene to Pliocene. The fossil *P. hainanensis* sp. nov. recovered from the coal-bearing series of the Changchang Basin from Hainan Island of South China is described in this paper, and this is the oldest megafossil of *Podocarpium* up to the present. In view of the fossil record of *Podocarpium* and its extant relative groups of Africa, the ancestral population of this genus is speculated to originate in Africa on the basis of continental drift theory and the Out of India hypothesis. After the Indian plate collided with Eurasia, *Podocarpium* migrated to Asia from the Paleocene and arrived at Hainan Island of South China in the Eocene. During the Oligocene, it was able to enter Europe. The existence of a wide spread arid band between north and south China from the Paleocene to the Oligocene made it difficult for *Podocarpium*, a thermophilous and moisture-loving plant, to disperse northward. In the Miocene it spread extensively across subtropical to warm temperate areas in Eurasia and reached its peak after the arid band disappeared. Due to the influence of the Tibetan plateau uplift and climatic deterioration, distribution of *Podocarpium* rapidly shrank and it finally became extinct in Eurasia during the Pliocene.

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