

The Role of the 'Suthasinobon' Waterlily Complex in Introgressive Hybridization*

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Abstract

Introgressive hybridization or introgression is the transfer of genes between two distinct species by the production of viable fertile hybrids. 'Suthasinobon' is an introduced day-blooming waterlily identified as Nymphaea capensis var. zanzibariensis. Together with its selections and hybrids, they are known as 'Suthsinobon' complex. Both 'Suthasinobon' and its complex are beautiful, aggressive plants and are popular among Thai waterlily growers. They hybridize readily with other Nymphaea species in the subgenus Brachyceras, including the only native day-blooming species, Nymphaea nouchali, known in Thai as 'Bua Phan' and 'Bua Phuean' which are two forms of N. nouchali var. versicolor, and 'Bua Khap' - N. nouchali var. cyanea. Evidences of introgression involving 'Suthasinobon' complex have been accumulated in the present study. The consequences of introgression are the breakdown of reproductive isolation, the loss of Thai native species of day-blooming waterlily, and the predominance of mongrels of partially hybrid ancestry closely resemble 'Suthasinobon' parent.

Keywords: Transfer of genes, distinct species, viable fertile hybrid, reproductive isolation, 'Bua Phan' 'Bua Phuen, 'Bua Khap'.

1. What is Introgressive Hybridization?

Generally, the hybrid individuals produced through interspecific hybridization are sterile, have low viability and soon disappear. This is because gene flow is not expected between two distinct species. However, sometimes the hybrids are apparently normal in every respect, are fertile, and can interbreed with members of both parental species and with other hybrids. In this case, the hybrids may form a genetic bridge through which gene flow can occur between two species. Such process is known as introgressive hybridization or introgression.

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"Introgressive hybridization" is defined as "the transfer of genetic material between two distinct species by the production of fertile viable hybrids and subsequent mating of hybrids with members of the parental species" (Anderson 1941).

2. 'Suthasinobon' and Its Complex

2.1 The History of 'Suthasinobon'

After accompanying His Majesty King Chulalongkorn (Rama V) to Indonesia in 1897, Her Royal Highness Princess Suthasininat brought back to Thailand a blue, day-blooming waterlily plant from Bogor Botanical Garden. Not long after its introduction, this plant grew splendidly in Thailand condition. In 1957, Prof. Kasin Suwatabhant, a well-known Thai taxonomist named it 'Suthasinobon' in honor of the person who introduced it. Since then, 'Suthasinobon' has become popular among Thai waterlily growers (Chomchalow 2005).