

An assessment of orchids' diversity in Penang Hill, Penang, Malaysia after 115 years.

Abstract

A comprehensive study on the orchid diversity in Penang Hill, Penang, Malaysia was conducted from 2004 to 2008 with the objective to evaluate the presence of orchid species listed by Curtis (*J Strait Br R Asiat Soc* 25:67–173, 1894) after more than 100 years. A total of 85 species were identified during this study, of which 52 are epiphytic or lithophytic and 33 are terrestrial orchids. This study identified 57 species or 64.8% were the same as those recorded by Curtis (1894), and 78 species or 66.1% of Turner's (*Gardens' Bull Singap* 47(2):599–620, 1995) checklist of 118 species for the state of Penang including 18 species which were not recorded by Curtis (1894) and the current study but are actually collected from Penang Hill. A comparison table of the current findings against Curtis (1894) and Turner (1995) is provided which shows only 56 species were the same in all three studies. The preferred account for comparison was Curtis' (1894) list as his report was specifically for the areas around Penang Island especially Penang Hill, Georgetown and Ayer Itam areas. Our study reveals that about 50% of Curtis' collection localities have been converted to residential areas and agricultural land, and this probably explains the decreasing numbers of species found in the current study especially for the terrestrial species as epiphytic species have better adaptation capabilities towards environmental.

Keyword: Orchid; Diversity; Threat; Penang Hill; Malaysia.