

VEGETATION PATTERNS AND STRUCTURE OF A SECONDARY FOREST ON MT. LONLON, NORTHEASTERN TAIWAN

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Abstract: Floristic composition and structure of a lowland secondary forest was studied in detail on Mt. Lonlon of northeastern Taiwan. The study plot contained 241 species, of which 70 were trees, 39 shrubs, 48 climbers, 45 herbs, and 39 pteridophytes. Diversity of the trees with dbh ≥ 1.0 cm was calculated as Shannon-Wiener index (3.09), Simpson index (0.08), and Equitability index (0.79). The dominance-diversity curve seemed to conform to a lognormal species distribution. The community structure was characterized by a relative dominance of *Myrsine sequinii*, *Ardisia sieboldii*, *Persea thunbergii*, *Wendlandia formosana*, *Gardenia jasminoides*, and *Schefflera octophylla* in the canopy, and *Psychotria rubra* and *Lasianthus plagiophyllus* in the understory. Detrended correspondence analysis and cluster analysis led to the recognition of three ecologically meaningful groupings. Diameter distribution curves for vegetation types were observed to fit the negative exponential function. However, slight underrepresentation in the smallest size-class of the upper slope vegetation might be indicative of some minor anthropogenic disturbances. Compared to the mature lowland rain forests of other areas the Lonlon forest showed a lower basal area, and seemed to be indicative of structural immaturity.

INTRODUCTION

The forest of northeastern Taiwan lies within the lowland subtropical rain forest formation (Liu 1968). By 1970, most of the arable land along the coastal region was under cultivation. The remainder was exploited for plantation and wood over the subsequent 20 years. Recently poor farming practices resulted in sporadic land abandonment. Thus, much of the area is today a mosaic of field and forests in different stages of secondary succession.

The study focused on secondary stand. The objectives are (1) to provide a detailed analysis of the composition, structure, and forest types, and (2) to compare and contrast the compositional and structural attributes of the secondary forest and the mature forest of the same formation.

STUDY AREA

The study area (Fig. 1) is located at the northern side of Mt. Lonlon (121°57'30" east longitude and 25°1'0" north latitude). Its elevation varies from 75 to 200 m and slopes average $>80\%$.

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