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A COMPARATIVE STUDY ON THE ANT COMMUNITIES IN PRIMEVAL AND SECONDARY FORESTS OF FOUR VEGETATION SUBTYPES IN XISHUANGBANNA OF CHINA

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Abstract: Through sample plot investigating method, a comparative study on ant communities in primeval and secondary forests of 4 vegetation subtypes were conducted in Xishuangbanna District. The secondary forests of mountain rain forest and karst monsoon forest were formed from the primeval forest by continuous excessive felling of trees and the structure of arbor crown is incomplete. Secondary forests of deciduous monsoon forest and monsoon evergreen broad-leaf forest were recovered from bare land after slash-and-burn cultivation about 20 years ago and the structure of arbor crown is complete. Peculiar species number of secondary forests of mountain rain forest and karst monsoon forest is distinctly lower than the number of primeval forests. But peculiar species number of secondary forests of deciduous monsoon forest and monsoon evergreen broad-leaf forest is about equal to or higher than the number of primeval forests. The dominant species number of primeval forests is usually larger

than the number of secondary forests. Species number of primeval forests is also larger than the number of secondary forests. Marginal effect is well displayed in the secondary forest of mountain rain forest. Karst monsoon forest is a relatively weak ecosystem, the stability of the ant community is obviously reduced in its secondary forest. A multi-species competition situation of an ecosystem in the later stage of an advance succession is presented in the secondary forest of deciduous monsoon forest. While the state of an ecosystem situated in the initial stage of an advance succession is expressed in the secondary forest of monsoon evergreen broad-leaf forest. According to the Jaccard similarity coefficient, the composition of the ant species all has distinct difference between primeval and secondary forests of the 4 vegetation subtypes. The result shows that formation of secondary forest is harmful to biodiversity conservation, and it is favorable for the conservation of biodiversity to change farmland into forest.

Key words: Ant community, Species diversity, Primeval and secondary forest, Vegetation subtypes, Xishuangbanna of China