

## Time Sharing of Song Activity by Cicadas in Temengor Forest Reserve, Hulu Perak, and in Sabah, Malaysia

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**Abstract:** During the Malaysian Nature Society's Expedition to Belum we observed that the singing of many cicada species is limited daily to a narrow time window of about 30 minutes to 2 hours. Similar observations were made by one author (K. R.) in Sabah. Many such cicada species sing only at dusk, but there are also species acoustically active only at dawn ("Morning Cicada"), or within a species-specific time window during the day (e.g. *Tosena depicta*), at noon (*Terengganua sibylla*), or even at midnight ("Midnight Cicada"). The authors discuss the connection of such behaviour with a high biodiversity in Malaysian rainforests. Unfortunately, the determination of species was possible only in some cases; for other cicadas we used preliminary mnemonic nicknames.

### INTRODUCTION

In March and April 1994 one of us (M.G.) took part in the Malaysian Nature Society's Heritage and Scientific Expedition to Belum (Davison *et al.*, 1995), with the main intention of investigating acoustic biodiversity in the virgin forest with a special emphasis on cicadas. During the three weeks at Temengor Forest Reserve we observed one peculiarity in the rich acoustic texture of the Belum forest - the exact daily timing of song emissions in many cicada species and some other animals. This was especially evident during dawn and dusk. Recently, the second author (K. R.) made similar observations in Sabah, Borneo. Both authors reported this in the form of posters at the 7th International Meeting on Insect Sound and Vibration in Graz (September 22nd to 25th, 1994) and the present paper gives a comparison of results from both localities to demonstrate the common features and the differences in the song sequences in Temengor and Borneo.

### MATERIAL AND METHODS

#### *Temengor*

Most acoustic recordings were made in the vicinity of the expedition base camp at Sungai Halong, Temengor Forest Reserve, between 21 March and 13 April 1994. Especially important were continuous intermittent recordings from the evening of 4 April to the morning of 5 April at the location "Tiger Hide" and at the sub camp from the afternoon of 11 April till the afternoon of 13

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