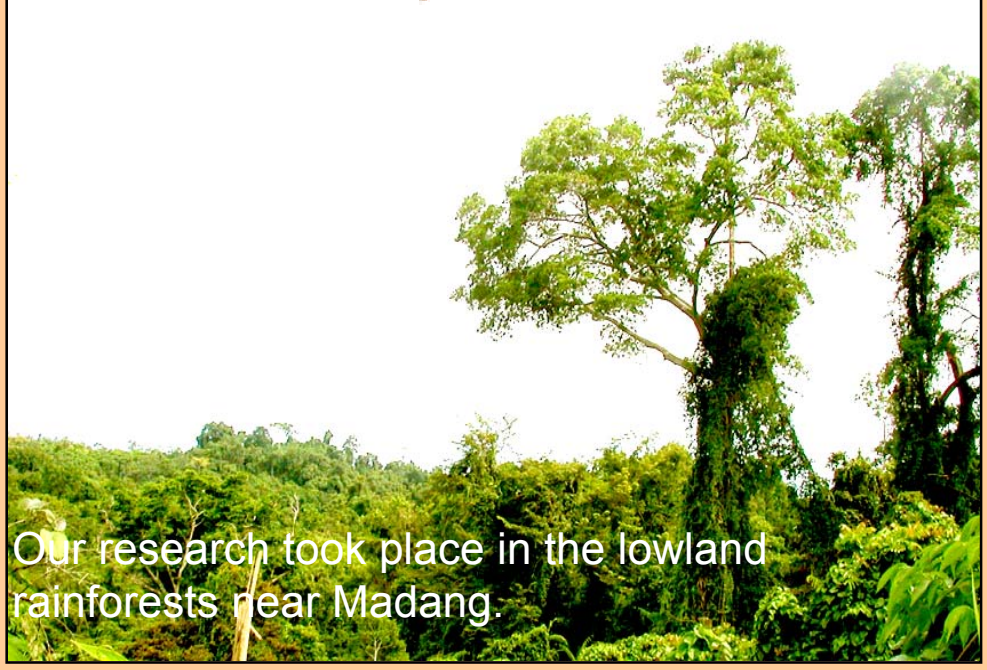
THE HOST SPECIFICITY AND THE BARK BEETLES

Introduction:

Knowing the host specificity and the community structure of a group is important in understanding its biology. This study examined host associations and community structure of bark beetles by rearing them from artificially killed trees.

Methods:

(1) Study area



(2) Selected trees

Eight species of trees were selected for this study

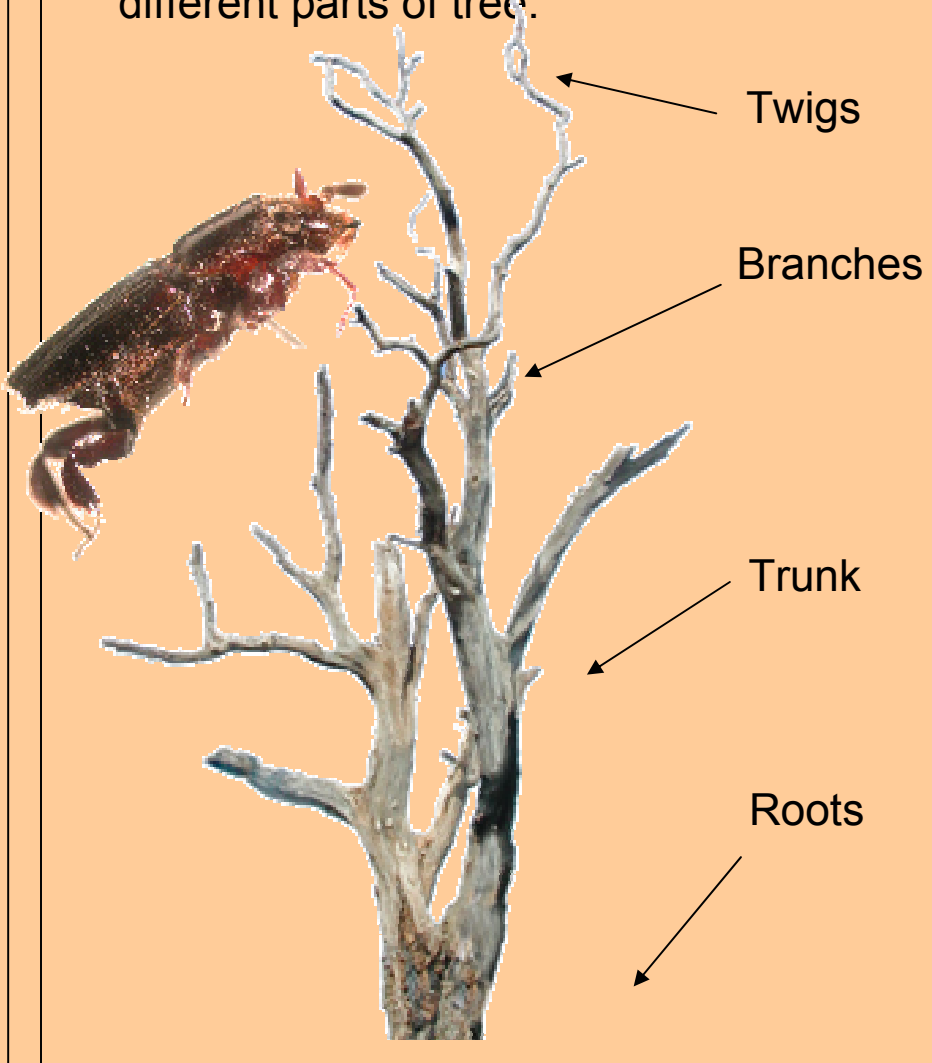
1. Ficus nodosa
2. Ficus pachystemon
3. Artocarpus communis
4. Pterocymbium beccarii
5. Litsea timoriana
6. Myristica sp.
7. Alstonia brassii
8. Pouteria sp.

(3), Killing target trees,

Trees were killed by removing the bark in a ring at breast height then let standing in the bush about a month to dry and get infested.

4, Tree parts,

Timber samples were separated into different parts of tree.



(5) Extractor

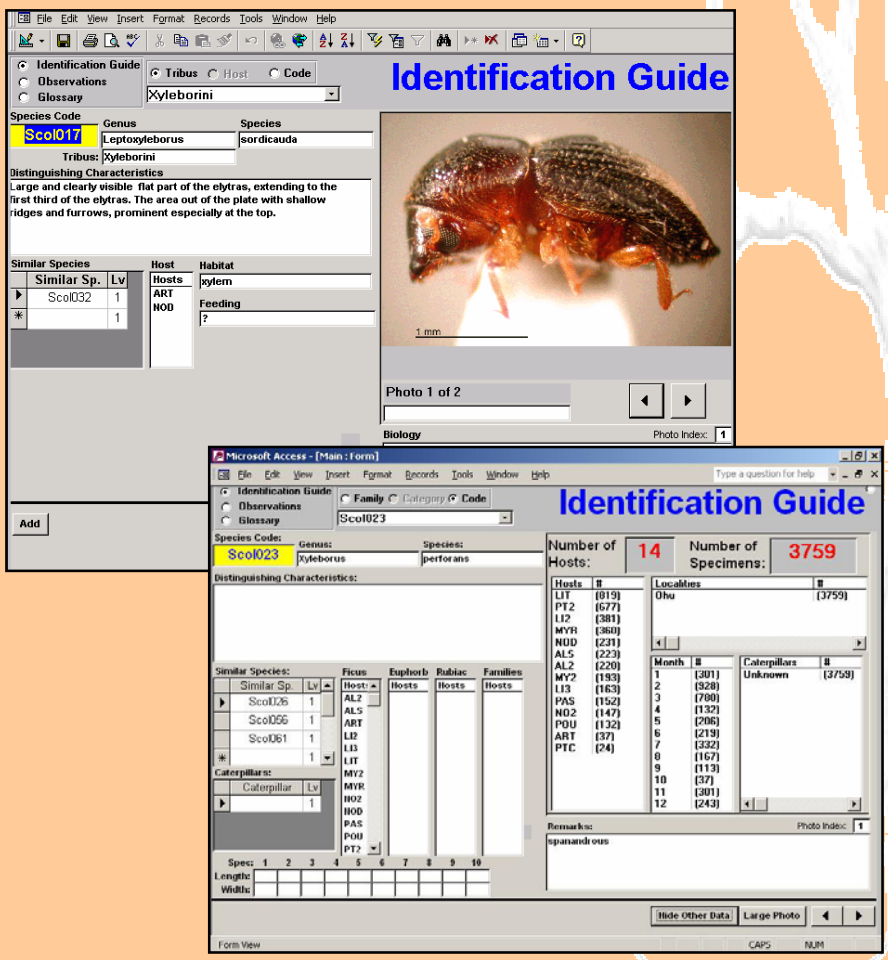
Extractors are used to collect bark beetles emerging from the timber samples.

(6) Sorting samples

The emerged beetles from the timber samples were sorted into species and labeled.

Results

(7) Databasing



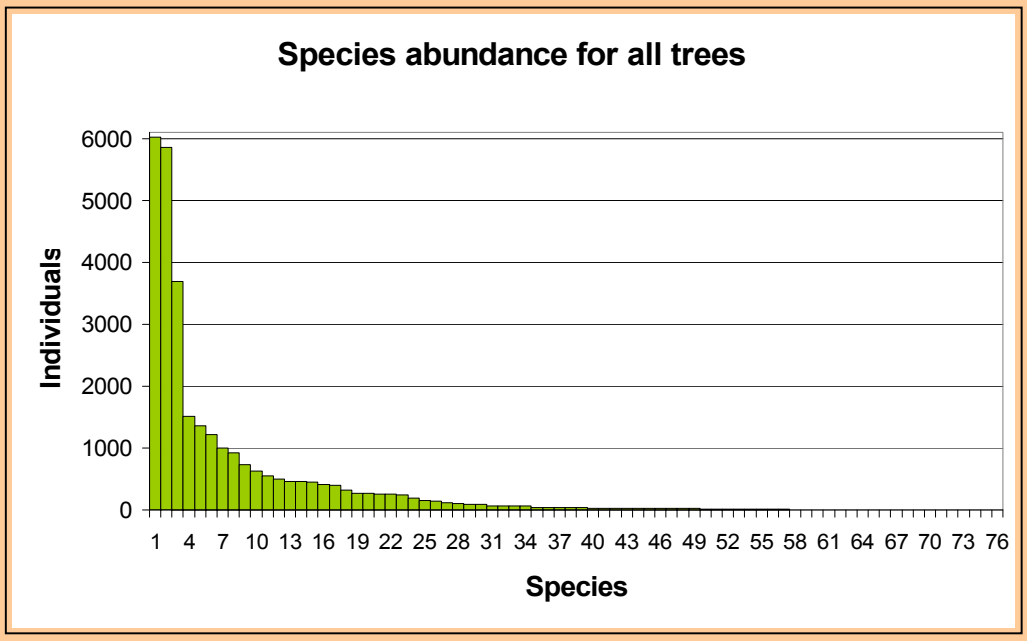
All the data were added to the insect host specificity database.

(8) Samples obtained

More than 30,000 individuals were obtained from 77 species.

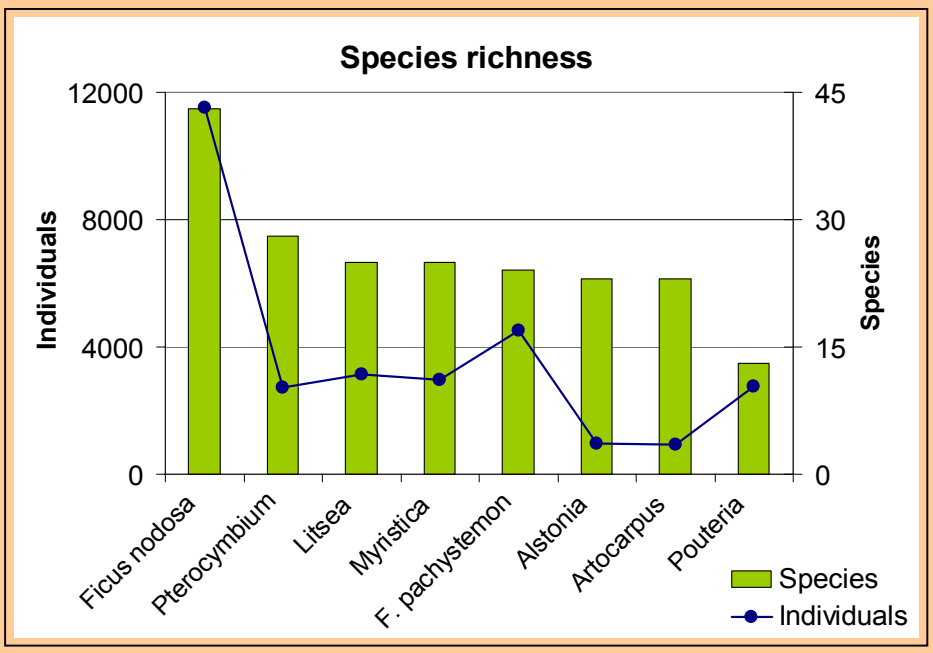
COMMUNITY STRUCTURE OF PNG

(9)



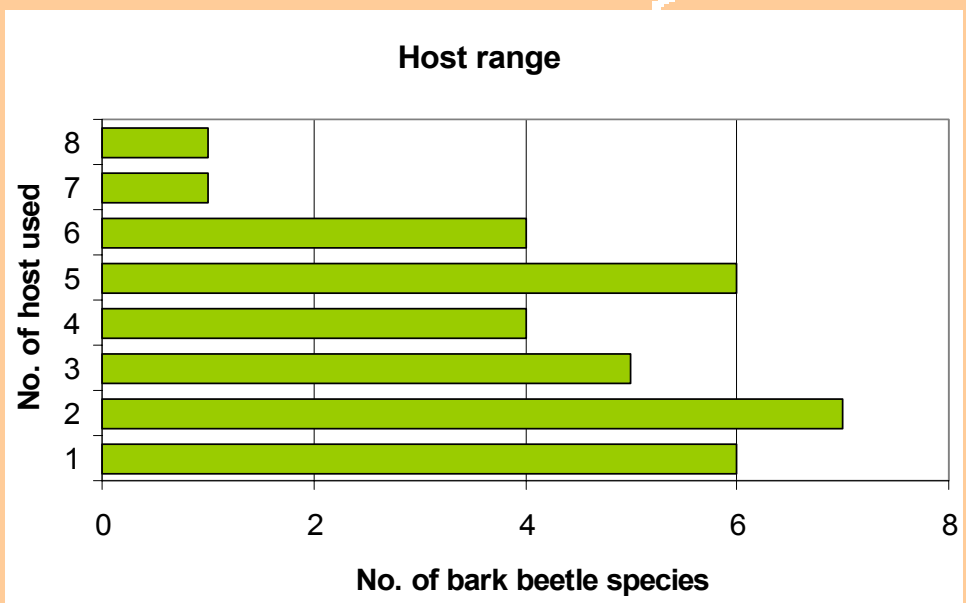
A few species dominate the bark beetle community. while most of the others are very rare.

(10)



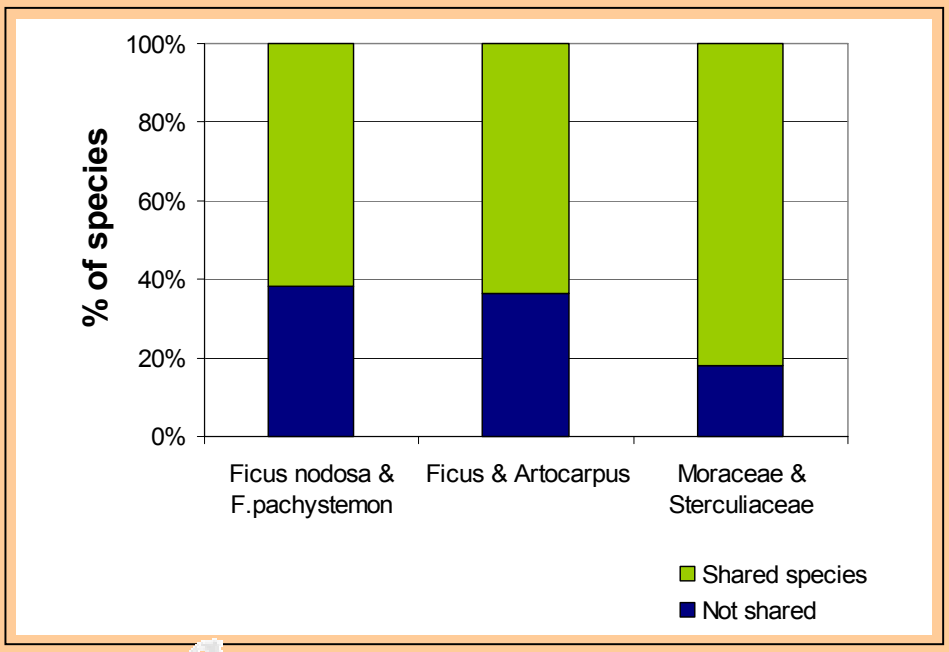
Ficus nodosa had the greatest number of individuals and species while *Pouteria* sp. had the poorest community.

(11)



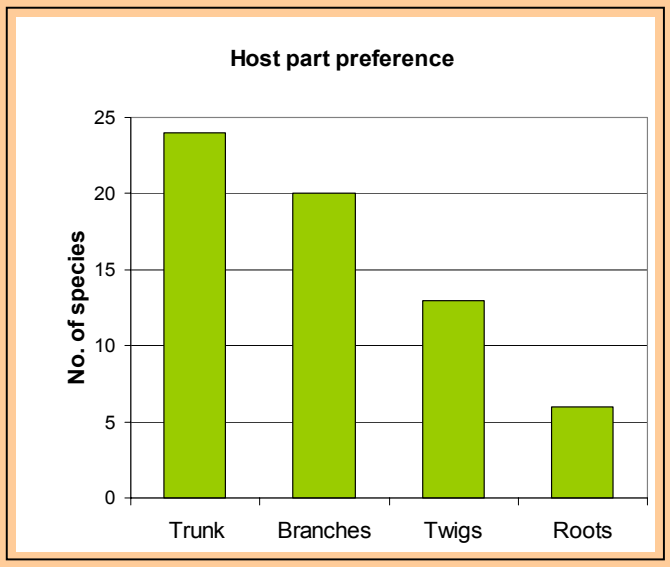
The bark beetle community exhibited low host specificity. Only 18% of the species were reared from just one tree.

(12) **Overlap in bark beetle species between different hosts**



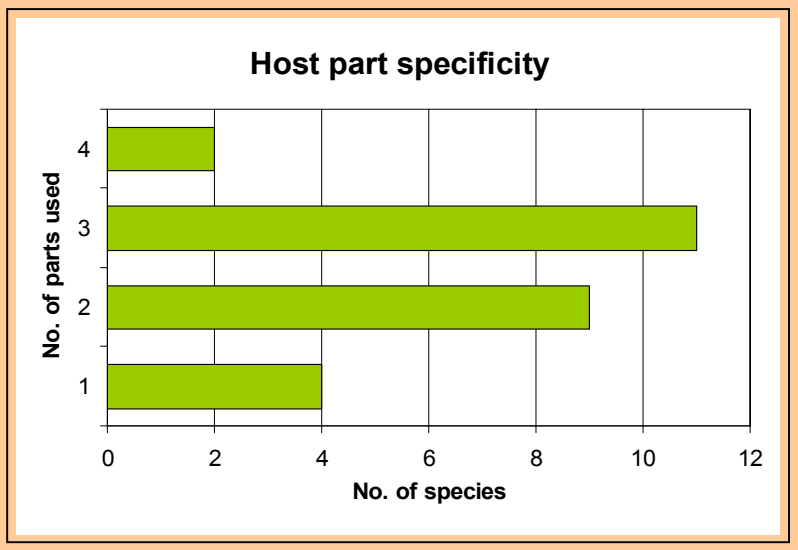
Many bark beetle species are shared between different host plant species, genera and families.

(13)



Bark beetles were most commonly found on the trunk and only few species used roots.

(14)



Bark beetles were generally not specific to any one part of the tree and were most often found on three parts of the host tree: trunk, branches and twigs

The bark beetle communities are dominated by a few very abundant species, and most of the other species are rare.
Bark beetles are not very host specific, and not limited to only one part of the tree.

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