ISLAND BIOGEOGRAPHY:
A STUDY OF HABITAT ISLANDS OF MOUNTAIN BEECH FOREST
(Nothofagus solandri, var. cliffortioides)
IN TONGARIRO NATIONAL PARK

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A thesis presented in partial
fulfilment of the requirement for the degree
of Master of Science in Zoology at
Massey University

1982
Abstract.

MacArthur and Wilson's (1967) model for island biogeography is examined, particularly with regard to the proposed species-area relationship. The first chapter includes a consideration of the theoretical background.

Nine habitat islands and corresponding mainland regions of similar area were selected. All the sites possess a canopy of mountain beech trees, *Nothofagus solandri* var. *cliffortioides*, and are located in the western segment of Tongariro National Park. Plants and litter animals were sampled from within these sites to determine the possible relationship between species and area.

Forest plant species numbers as well as proportions, assessed using a modification of the Point-centred quarter method, revealed a statistically significant species-area relationship.

Litter Crustacea collected in one thousandth of a square metre core samples, and removed from cores by wet extraction, show a gradation in habitat preference, hence a species-area relationship cannot be determined.

A wide range of animals collected in pitfall traps appear also not to produce a significant species-area relationship. Possible reasons for the obscurity of such a relationship are considered.

An overall assessment of the information gathered in the light of island biogeographic theory is presented, and some more recent thought on the causal explanations for the species-area relationship are discussed.
Acknowledgements.

The assistance, encouragement and ideas of a number of people have contributed greatly to this thesis. I should like to express my sincere thanks to all of them.

Dr. J. P. Skipworth, my supervisor, has provided invaluable constructive help and support throughout the study. Possible methods of sampling, extracting and examining litter animals have been suggested by Dr. J. Springett (Research Division, M.A.F.). Numerous statistical problems have been solved by D. C. Drummond, who has also offered some interpretational ideas.

Dr. H. P. McColl (Ecology Division, D.S.I.R.), Dr. M. J. Meads (Ecology Division, D.S.I.R.) and D. M. Mill all aided in the identification of animals; Dr. Meads particularly with Carabidae and Diana Mill with Diplopoda. Dr. I. A. E. Atkinson (Botany Division, D.S.I.R.), identified some Coprosma species which presented difficulties.

Thanks are also due to the Tongariro National Park Board for permission to carry out the project, and for the use of facilities on several occasions.

I am grateful to my classmates Simon Kelton and Peter Lo who have provided enthusiasm, advice and equipment during the study. The skills of both my parents have been enlisted in the presentation of this thesis; my Mother has typed the script and my Father printed the colour photographs. Last, but by no means least, my husband Michael who has not only aided in the field work, but also contributed financially, and has been tolerant and patient throughout.

I am indebted to all these people; their endeavours on my behalf are greatly appreciated.
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