VEGETATION COLONISATION OF RANGITOTO ISLAND: THE ROLE OF CREVICE MICROCLIMATE

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FRONTISPIECE

Long ago, a family of giants quarrelled about a badly woven garment and cursed Mahuika, the goddess of fire. Enraged, Mahuika sent a earthquake to destroy them and to transport their mountain into the sea. The giants themselves disappeared into the earth leaving volcanic basins at Shoal Bay and Northcote; the mountain, too, sank and in its place Lake Pupuke came into being as Rangitoto rose from the sea.

"declivity, cavern, crevice are always female symbols"

Berta Eckstein-Diener (1965)

Everywhere lies barren, desolate and hard

until

she

grants birth

life begins within the soft depths

of woman

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ABSTRACT

This study describes an investigation to characterize both the crevice microclimate and flora on Rangitoto Island, and to illustrate the role crevices play in vegetation colonisation of the raw lava flows. This was achieved by extensive micrometerological and botanical surveys combined with detailed study of seed fall, seedling establishment and survivorship in the lava fields. Based on these findings, a series of laboratory investigations examined the dispersal and germination of seed, and early seedling establishment, growth and survival of principal crevice pioneer species.

The microclimate of the bare lava flow surface is characterized by extremely high temperatures and lack of moisture. It appears the only possible site of summer-spring survival and successful colonisation in open areas of the lava apron is the temperature moderated, water economical crevice. Once a canopy of vegetation develops this restriction is reduced. Of the crevice flora, only 8 species appear able to act as open flow pioneers. Detailed examination of two of these species (*M. excelsa* and *O. furfuracea*) revealed a diversity of successful pioneer strategies in terms of reproduction and early stages of the life cycle.

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