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Some responses of Eryngium vesiculosum Labill.
to light intensity, daylength, and nitrogen.

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requirements of the degree of Master of Horticultural
Science in Plant Science at Massey University.

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INTRODUCTION

Eryngium vesiculosum Labill. is a plant commonly found in sandy coastal flat in New Zealand. Some preliminary observations (pers comm. Veale) had suggested that flowering in this species might be controlled by the external environment especially with respect to daylength. Normally the mature plant has oblong and dissected leaves but in the shade the leaves tend to have less dissection and this change in leaf form serves as a useful feature for morphological investigations. Another interesting feature of the plant is that it produces runners like the strawberry plant. The plant also produces daughter plants on the runners and lateral branches. The production of these organs, which enables a large family of homogenous plants to be raised rapidly by vegetative propagation is another feature which would make this plant useful experimental material. The object of this study is to obtain some information on the effects of light intensity, daylength and nitrogen on flowering, leaf morphology and anatomy and plant growth.

Much work has been carried out on the effects of the three external factors used in this study on many plant species but none on E. vesiculosum. Because of the absence of such information on this plant, the review of literature includes other plant species thus making it more voluminous than otherwise would be. For obvious reasons the review has been limited to present only the salient responses of some plant species to light intensity, daylength and nitrogen.