T. pratense - red clover - occasional on ridge.
T. repens - white clover - common thoughout.
Verbascum thapsus - mullein - occasional on ridge.
Wahlenbergia gracilis - harebell - rare on ridge.

Correction:

Among the shrubs listed in No. 10 of this Journal Olearia nummulariifolia should read O. nummulariifolia var. cymbifolia if Allan's Flora is followed or O. cymbifolia if Cheesman's treatment is preferred.

CAULIFLORY IN ELAEOCARPUS HOOKERIANUS

by M.J.A. Simpson

The inflorescence of Elaeocarpus is described by Cheesman (1925) as "in axillary racemes", and generally in both pokaka (E. hookerianus) and hinau (E. dentatus) flowering racemes do arise from leaf axils on leafy shoots. However, when collecting flowering specimens of pokaka near Little River early last December I noticed that most flowers within reach were on racemes rising from bare branches and some even from the upper trunk giving the appearance of cauliflory.

The highly specialised conditions of cauliflory, where flowers are borne on the bare trunk or along branches well away from the leaves, is widespread in trees of tropical rain forests. In some form or other it exists in genera belonging to many or most of the larger tropical families. Trees with this kind of flowering are relatively rare in temperate regions, although one with which gardeners are familiar is the Judas tree (Cercis siliquastrum). In the New Zealand flora the most notable example is the kohekohe (Dysoxylum spectabile) of nothern forests, but other known examples in New Zealand genera with tropical affinities are

not cited in the literature.

According to Stebbins (1974) cauliflorous inflorescences are produced from meristems formed on the main trunk, on principal branches of the tree, under the leafy canopy, and sometimes from near the roots. Sporne (1974) states that there are various kinds of cauliflory with "simple cauliflory" resulting from axillary buds continuing to produce flowers, year after year, until the shoot bearing them has become a thick branch or even the main trunk. This could describe the flowering on trees of pokaka at Little River where the position of the racemes on the bare branches is still clearly axillary although leaves are no longer present.

Stebbins(1974) considers that the adaptive significance of cauliflory appears to be associated with cross pollination and that in tropical forests where low shrub and herbs are scarce, adaptation to animal pollinators (insects or bats) that live near ground level is a niche most easily filled by cauliflorous trees. Following this he surmises that cauliflorous species have entered the rain forest secondarily being derived from ancestors that lived in more open habitats. To test this hypotheses he asks; are the nearest relatives usually non-cauliflorous species inhabiting rain forests and adapted to pollination by vectors in the canopy or are these relatives found in more open regions that surround the rain forests?

Elaeocarpaceae is a family with some 7 genera, mostly tropical and the only other New Zealand representative is the dioecious genus Aristotelia, which also can be cauliflorous (Cockayne 1967 p 31). The tree species A.serrata is usually found on the margins of forests and in open cleared places while both New Zealand species of Elaeocarpus are inhabitants of lowland forest.