

ECOLOGY OF ORUAWAIRUA ISLAND

MARLBOROUGH SOUNDS, NEW ZEALAND

III THE ALGAE

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ABSTRACT

The general distribution of the algae on a specified region of the shore of Oruawairua Island is described. A checklist of 30 species is presented.

INTRODUCTION

Observations and collection of the marine flora of Oruawairua Island, Marlborough Sounds, New Zealand, were made at low tide on 10-11 November, 1978. The predicted height of the low tides was 0.3m (New Zealand tide tables 1978). The two headlands at the southern end of Orchard Bay (NZMS 1 S16 506394) were surveyed in most detail, with additional collections being made along the shore between these headlands and the cottage site (see Fig.1 of Conner and Conner 1981, page of this volume.

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The substrate of the shore was mainly sandstone, weathered to varying degrees. Fine gravel covered the shore near the cottage site and the rocks became gradually coarser toward the first headland. This change may be associated with wave direction. The headland reef itself had little gravel, the rocks being weathered with bedding planes forming channels running out towards the sea. The second headland was similar but a larger reef area was emergent at low tide and the channels were deeper. The shore was narrow, ending abruptly at the scrub edge or in steep vegetation-covered bluffs (see Conner et al (1981)).

GENERAL DISTRIBUTION OF ALGAE

Scattered *Ulva lobata* and *Scytothamnus australis* were found throughout the intertidal region on the gravel shore. As the gravel became coarser, *Porphyra columbina* became moderately abundant in the upper intertidal region. The general diversity of the biota appeared to increase with increasing stability of the substrate.

The reef of the first headland was dominated by *Hormosira banksii*, often with *Notheia anomala* epiphytic on it. Scattered *Ulva lobata* and *Scytothamnus australis* were still present and *Glossophora kunthii*, *Colpomenia sinuosa* and *Gelidium allanii** were also collected.

The second reef was also dominated by *Hormosira banksii*. Other algae that were collected:- *Cystophora torulosa* (especially in a deep hollow in the central region of the reef), *Codium dimorphum*, *Codium fragile*, *Splachnidium rugosum*, *Colpomenia sinuosa* (epiphytic on *C. torulosa* and *S. rugosum*), *Corallina officinalis*, *Gelidium longipes**, *Ectocarpus irregularis* (epiphytic on *G. longipes*), *Enteromorpha compressa* var. *australiensis* (epiphytic on *G. longipes*) and *Grateloupia doryphora*. Some *Carpophyllum maschalocarpum* was emergent at low tide level. In addition, several crustose algae have been collected but regrettably, remain unidentified.

Large bands of the brown alga, *Carpophyllum maschalocarpum*, were seen from the shore. This alga grew subtidally, attached to the bottom and floating to the surface. These plants were often more than a metre long. The fronds were broader near the surface, with a number of epiphytes attached to them. *Macrocystis pyrifera* also grew subtidally but was not as abundant as *C. maschalocarpum*.

* Indicates uncertainty associated with the given specific name.)

Vaucheria sessilis was collected from the fresh water stream near the cottage site.

CHECKLIST OF ORUAWAIRUA ISLAND ALGAE

Classification and botanical nomenclature follows Prescott (1951) for the Xanthophyta and Lindauer et al (1961) for the Phaeophyta. The Chlorophyta and Rhodophyta are classified according to Parke and Dixon (1976) and named according to Chapman (1956) and Chapman (1969) respectively.

Voucher specimens of the plants collected are retained in the herbarium of the Botany Department, University of Canterbury.

XANTHOPHYTA

CLASS: XANTHOPHYCEAE

Order: Heterosiphonales

Vaucheria sessilis (freshwater)

CHLOROPHYTA

CLASS: CHLOROPHYCEAE

Order: Ulvales

Enteromorpha clathrata var. *angustimembrana**Enteromorpha compressa* var. *australiensis*(epiphytic on *Gelidium longipes**)*Enteromorpha intestinalis**Ulva lobata*

Order: Cladophorales

Cladophora daviesii (free-living and epiphytic on *Hormosira banksii*).

Order: Codiales

*Codium dimorphum**Codium fragile*

PHEOPHYTA

CLASS: ISOGENERATAE

Order: Ectocarpales

Ectocarpus indicus (epiphytic on *Scytosiphon lomentarius*)*Ectocarpus irregularis* (epiphytic on *Pleonosporium hirtum*)

Order: Dictyotales

Glossophora kunthii

* Indicates uncertainty associated with the given specific name.)

CLASS: HETEROGENERATAE

Order: Chordariales

Notheia anomola (epiphytic on *Hormosira banksii*).
Splachnidium rugosum

Order: Dictyosiphonales

Colpomenia peregrina (epiphytic on *Splachnidium rugosum*, *Cystophora torulosa*, *Hormosira banksii* and *Laurencia* sp.).

Scytosiphon lomentarius (free-living and epiphytic on *Hormosira banksii*)

Scytothamnus australis

Order: Laminariales

Macrocystis pyrifer

Order: Fucales

Carpophyllum maschalocarpum

Cystophora torulosa

Hormosira banksii

RHODOPHYTA

CLASS: BANGIOPHYCEAE

Order: Bangiales

Porphyra columbina

CLASS: FLORIDEOPHYCEAE

Order: Nemaliales

*Acrochaetium leptonemoides** (epiphytic on *Cladophora* sp.).

*Gelidium allanii**

*Gelidium longipes**

Order: Cryptonemiales

Corallina officinalis

Grateloupia doryphora

Order: Ceramiales

Laurencia sp.

Pleonosporium hirtum

Polysiphonia spp. (two species).

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