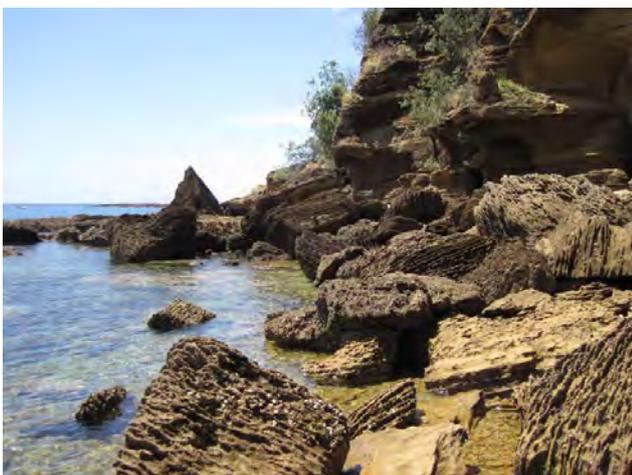


<i>Fissidens curvatus</i> var. <i>curvatus</i>	Fissidentaceae <sup>1</sup>	358472
<i>Fissidens linearis</i> var. <i>linearis</i>	Fissidentaceae <sup>1</sup>	358473
<i>Fissidens tenellus</i> var. <i>tenellus</i>	Fissidentaceae <sup>1</sup>	358474
<i>Macromitrium gracile</i>	Orthotrichaceae	358475
<i>Philonotis tenuis</i>	Bartramiaceae	358476
<i>Ptychomnion aciculare</i> <sup>2</sup>	Ptychomniaceae	358477
<i>Rhaphidorrhynchium amoenum</i> <sup>2</sup>	Sematophyllaceae	358478
<i>Rhynchostegium ?laxatum</i>	Brachytheciaceae	358479
<i>Rhynchostegium tenuifolium</i> <sup>2</sup>	Brachytheciaceae	358480
<i>Rosulabryum ?capillare</i>	Bryaceae <sup>1</sup>	358481
<i>Sematophyllum homomallum</i>	Sematophyllaceae	358482
<i>Tortella flavovirens</i> <sup>2</sup>	Pottiaceae	358483
<i>Tortula muralis</i>	Pottiaceae	358484
<i>Trichostomum sciophilum</i>	Pottiaceae	358485
<i>Weissia</i> "N Cape"	Pottiaceae	358486

## Algae of Motuketekete, Hauraki Gulf

Mike Wilcox

The shoreline of Motuketekete covers a distance of around 2.7 km. There is a short sandy beach at the northern end and cobble or gravel beaches on the western side; the rest of the shore has hard greywacke in the northwest and south west, while an unusual flaggy limestone is the dominant rock type in the north and east (Fig. 1). The seawater was very clear during a visit by the Auckland Botanical Society (ABS) made on 23 November 2014. Intertidal seaweeds were noticeably sparse or absent over long stretches of the shore. For a general introduction to the island and the ABS visit see Cameron (2015).



**Fig. 1.** Limestone formation, northern coast, Motuketekete. Photo: Mike Wilcox, 23 Nov 2014.

The sheltered western shore has subtidal beds of the brown algae *Colpomenia sinuosa* and *Hydroclathrus clathratus*, both of which wash up as drift on the gravelly beaches. Lower intertidal algae prominent during the visit were *Microdictyon mutabile* and *Leathesia marina* (a spring-summer annual) (Fig. 2), and below these, *Cystophora torulosa*. There were also patches of *Hormosira banksii*, best seen in shallow rock pools in the northwest, crusts of *Ralfsia verrucosa*, and occasional *Codium fragile* subsp. *fragile* (Fig. 3). *Cystophora torulosa* also occurred subtidally on the



**Fig. 2.** *Leathesia marina* and *Microdictyon mutabile* association, with *Cystophora torulosa*, Motuketekete. Photo: Mike Wilcox, 23 Nov 2014.



**Fig. 3.** The exotic green seaweed *Codium fragile* subsp. *fragile*, Motuketekete. Photo: Philip Moll, 23 Nov 2014.



**Fig. 4.** Trumpet shell (*Charonia lampas*), in a deep rock pool, on western shore towards south west tip, Motuketekete. Photo: Mike Wilcox, 23 Nov 2014.



**Fig. 5.** A coastal lichen, *Teloschistes flavicans*, Motuketekete. Photo: Mike Wilcox, 23 Nov 2014.

western shore, and with patches of *Dictyota papenfussii* and *Sargassum sinclairii*, and an impressive zoological treasure in a deep rock pool – the large trumpet shell, *Charonia lampas* (Fig. 4). On the much more exposed northern, eastern and southern shores, *Carpophyllum maschalocarpum* was by far the dominant large brown alga, accompanied by *Ecklonia radiata* subtidally, and with *Xiphophora chondrophylla* forming a lower littoral fringe.

Red algae were extremely meagre. There were some moribund turfs of *Corallina officinalis*, some patches of *Jania verrucosa*, and sparse turfs of *Gelidium caulacanthum* and *Caulacanthus ustulatus*. The only reasonably common red algae were *Apophlaea sinclairii*, generally abundant on upper intertidal greywacke, and *Laurencia thyrsoifera*, which occurred sparsely on lower intertidal ledges on the eastern limestone coast. A red alga of particular interest was *Bostrychia vaga*, a highly shade-tolerant, minute dark brownish-red turfing species which was found growing in large patches on the walls and roof of a small cave in the limestone.

The upper intertidal seaweed flora was mainly confined to a few shaded rock faces or splash pools, the species recorded being the cyanobacteria *Lyngbya aestuarii* and *L. majuscula*, the green algae *Rhizoclonium riparium* (rock faces) and *Ulva flexuosa* subsp. *flexuosa* (pools), and the filamentous brown alga *Bachelotia antillarum*. A few stunted *Scytothamnus australis* were found on limestone.

In addition to the crustose algae *Apophlaea sinclairii* (red) and *Ralfsia verrucosa* (brown) that have already been mentioned, three marine lichens of the upper intertidal zone were recorded. The blackish paint-like *Hydropunctaria maura* (formerly *Verrucaria maura*) occurred on the northern coast, the tufted, short blackish *Lichina pygmaea* was abundant on the hard greywacke, while *Verrucaria microsporoides* grew in flat patches on smooth stones along the cobble shore on the western side. In the splash zone immediately above the greywacke shore line grew several characteristic lichens, the dominant ones being *Xanthoria ligulata* (orange) and *Buellia cranwelliae* (thin white with prominent black apothecia). Above these in a few places were other lichens, two conspicuous ones being *Ramalina australiensis* and *Teloschistes flavicans* (Fig. 5).

#### Reference

Cameron, E.K. 2015: Flora and vegetation of Motuketekete, and Moturekareka group flora updated, Hauraki Gulf. *Auckland Botanical Society Journal* 70: 77-104.