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Chionochloa conspicua subsp. *cunninghamii* (Gramineae) in the Waitakere Ranges

Rhys Gardner

Until 2001, when Chris McKain found this native snow-tussock (*Chionochloa conspicua* subsp. *cunninghamii*) on the slopes south of the Karamatura Stream, all of its records in northern New Zealand were from the Bay of Islands-Waipoua-Whangarei region. The plants Chris saw are right beside the track, and would surely have been noticed by others if they had been there long.

One might think that somewhere closer to the stream, on its steep, damp gorge walls and ledges, out of direct sunlight, there might be more *Chionochloa conspicua* subsp. *cunninghamii* colonies. Taking an indirect approach, in Feb 2006 I explored not the Karamatura but the Pararaha, to find a few plants in the damp scrub on the stream's true right bank, not far above the major waterfall (as shown on topo sheet 260 R11). A greater surprise came subsequently when I also found a few plants on the Piha Stream, at the top of the gorge, just below what is now known as "Black Rock Dam".

I also noted it a few years ago on the summit of the Bream Head range, and (in Jan 2007), at the top of the forested part of Mt Manaia (that is, just below the summit pinnacles themselves).

What is going on here? Have these plants newly sprung up from long-overlooked nearby sources, or has there been an especially successful wave of colonisation from the south ? It would be useful to know whether this grass might have increased in abundance along the tops of the Coromandel and Kaimai Ranges, by spreading through animal-damaged forest that in the last decade or so has seen its burden of pests (especially goats?) greatly reduced.

The distribution and influence of the introduced alga *Colpomenia bullosa* within New Zealand

Daniel McNaughtan

The introduced intertidal brown alga *Colpomenia bullosa* was first observed in Leigh Marine Reserve, North of Auckland, over 20 years ago (Parsons 1982).

Fig. 1. Scale picture, *Colpomenia bullosa* gametophyte, October 2006, Palmer Head, Wellington (Daniel McNaughtan).

Since this initial discovery the species has undergone a range expansion and can now be found in several North Island port and adjacent areas including Gisborne, Napier, and Wellington (Nelson 1999). Recently, isolated plants have also been discovered in two locations near Nelson in the South Island. Despite this continued range extension very little is known about its localised distribution or the effects it may be having on endemic communities. This study addresses some of these issues by investigating its local intertidal distribution, physiological tolerance towards temperature and light, and how it interacts with other algal species of comparable morphology.

Like several other brown algal species, *C. bullosa* has a heteromorphic life history with two distinctly separate phases. The most recognisable is the upright gametophytic phase that can be identified by its brown finger-like projections 10-12 cm long and numbering 1-8 per holdfast (Adams 1994). The alternate phase is a crustose sporophytic thallus that can be easily identified with practise and can cover significant amounts of available substrate in intertidal pools. While the upright phase shows a pronounced seasonal distribution, present early spring to mid summer, the crustose phase is present throughout the year and is more likely to have long-term ecological impacts. While the exact origin of the species is unclear, recent molecular work has shown that the New Zealand species is identical to the species found in Japan (W. Nelson *pers. comm.*, 2006).

The first stage of this study was to quantify the distribution of this introduced alga within the intertidal zone and establish which endemic or naturalised